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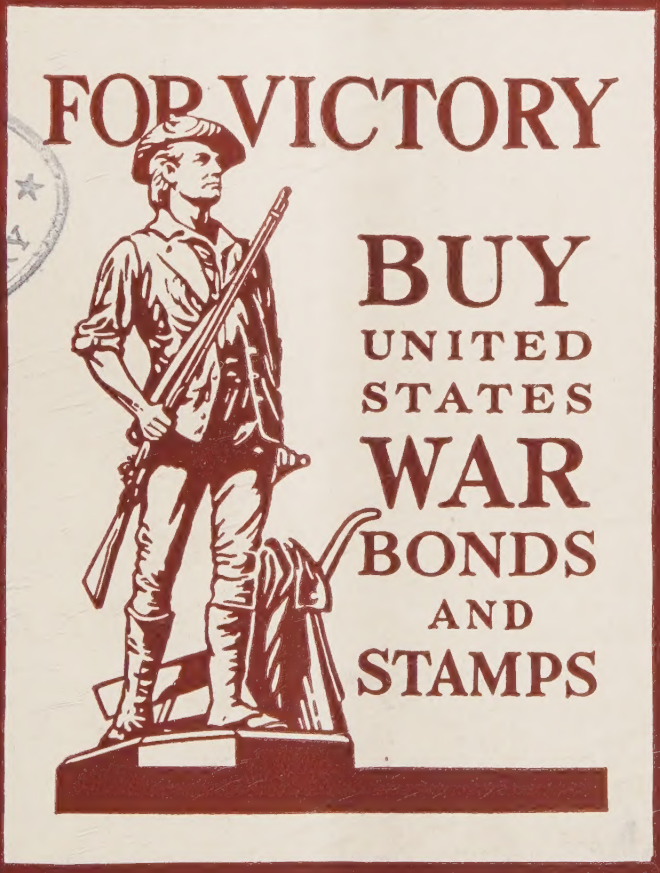

October 1943

Vol. 156, No. 10

"If the woman eats bees . . ."

Among the many strange superstitions current in the Middle Ages, was the belief that if a woman would eat bees, she would not become pregnant.*

*Himes, *Medical History of Contraception*

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OCTOBER 1943

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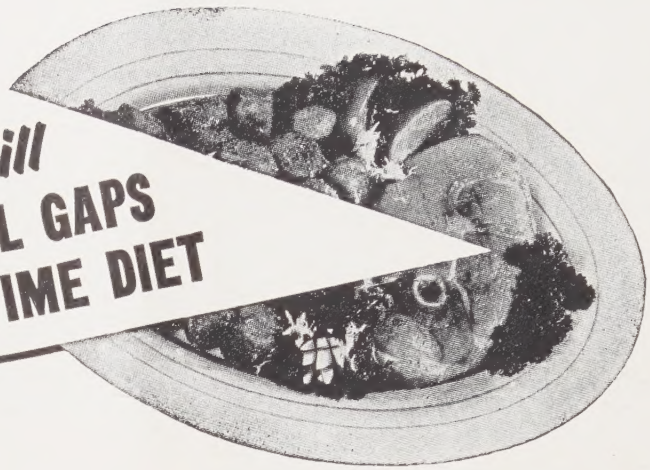

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Nutritional deficiencies, particularly in vitamins and minerals, are likely to become more prevalent as the war progresses. To fill certain gaps in the wartime diet arising from food rationing and shortages, more and more physicians now depend on . . .

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TRUTH OF THE MATTER

We Will Have Enough to Eat

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Open Forum

Doctor Shortage and Civilian Health in Wartime

Despite critical shortages at many points in the medical defenses of the nation, a generally favorable picture of civilian health is presented by the Office of War Information on the basis of data from the United States Public Health Service, the War Manpower Commission and the Federal Works Agency.

1. Statistics of the Public Health Service show the lowest death rate on record, 10.3 per thousand for 1942. The birth rate has risen from 18.7 per thousand in 1941 to 20.7 in 1942, and the maternal mortality rate has dropped, for the thirteenth consecutive year, and for 1942 was about three deaths per thousand live births. Infant mortality also continued to drop, falling to forty or forty-one per thousand live births. The general death rate is a little less favorable so far this year.

2. Statistics on a sampling of workers, concerning sickness which caused absences of longer than eight days, show an increased number of man-days lost especially from respiratory sickness. However, according to the Industrial Hygiene Division of the United States Public Health Service, this increase is not greater than was expected from the strain of wartime living and working conditions.

3. The 1942 and more recent reports on communicable diseases, perhaps not the best gauge of adult health, show a mixed tendency. Influenza and typhoid, normally danger points under war conditions, were in 1942, below the peacetime average. Infantile paralysis and meningococcus meningitis (cerebrospinal fever) showed sharp increases this year. There have been flareups of smallpox, and sporadic outbreaks of food poisoning and dysenteries. Strenuous efforts are being made to control the traditional wartime upturn of venereal disease and tuberculosis deaths. The latter has not yet begun to show in health records.

The shortage of doctors for civilian practice will continue to increase indefinitely unless the requirements of the armed forces are revised.

This arises, first, from the fact that the armed forces have commissioned, to date, only a little more than eighty percent of their stated needs and are continuing to withdraw physicians from civilian practice; secondly, from the fact that eighty percent of all new medical graduates will be commissioned.

There is no guarantee that a full twenty percent of these graduates will remain for civilian work. Even if the 1,500 represented by this percentage should remain, they would supply only about half the replacement needed in peacetime, since, on the average, 2,500 to 3,000 doctors die annually.

To compensate for this shortage, the Public Health Service and the Procurement and Assignment Service of the War Manpower Commission are making all possible efforts to achieve the optimum distribution of the doctors remaining for civilian practice, to minimize needs by extensive preventive work and increase of

(Continued on page 584)

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• lubricates skin
• gives antiseptic protection
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Gentlest on infants' skin
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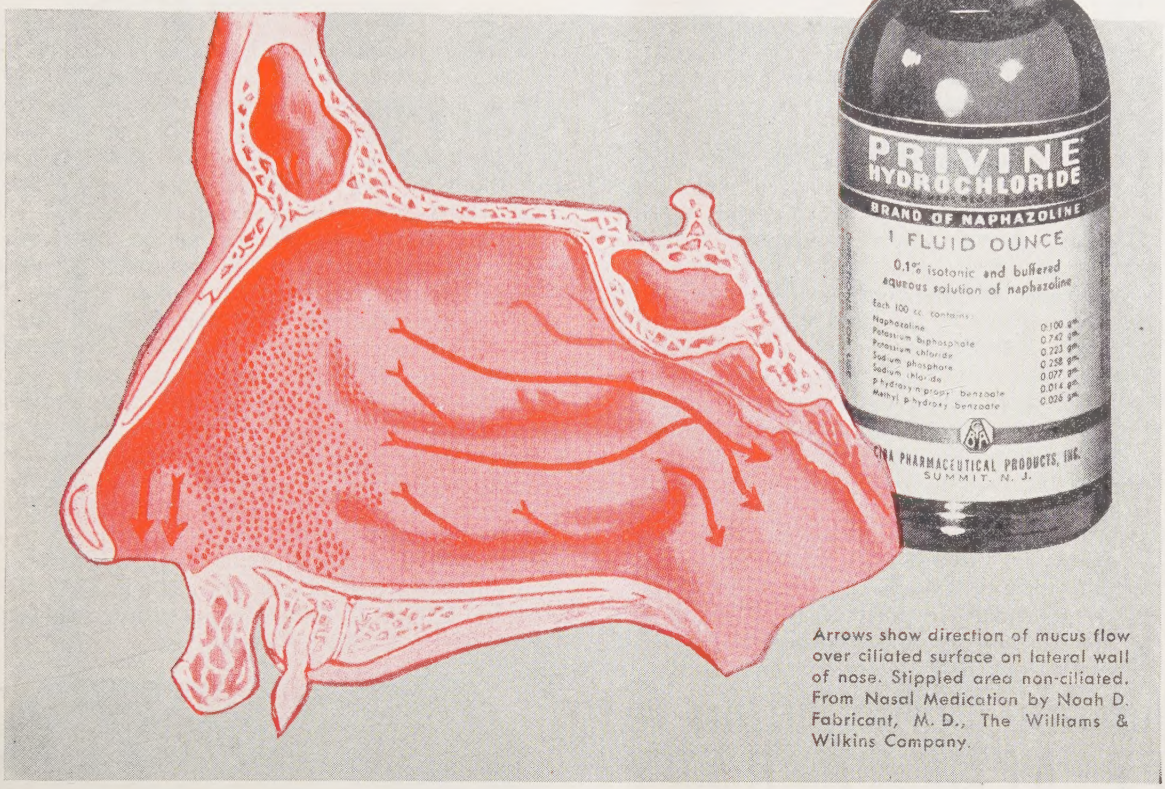

Arrows show direction of mucus flow over ciliated surface on lateral wall of nose. Stippled area non-ciliated. From Nasal Medication by Noah D. Fabricant, M. D., The Williams & Wilkins Company.

THE first line of defense of the upper respiratory tract is the mucociliary layer which is surprisingly efficient in its action. Direct ciliary action helps keep the mucus film in constant motion toward the nasopharynx—entrapping bacteria and offering considerable resistance to penetration of the epithelial layer. Therefore nasal medications which prove harmful to ciliary action impair a highly important nasal function.

PRIVINE* HYDROCHLORIDE (Brand of Naphazoline) a new, effective nasal vasoconstrictor giving prolonged symptomatic relief from two to six hours, has been shown by animal experiments to act favorably on ciliary activity. ***PRIVINE HYDROCHLORIDE*** prepared in line with present day standards restores and preserves this natural defense mechanism . . . ***Available*** in 0.1% solution in 1 oz. bottles and also 0.05% in 1 oz. bottles for children.

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SUMMIT, NEW JERSEY

These things are being accomplished by, 1, making surveys to show where needs are acute.

2. Seeking to shift physicians from relatively well-supplied areas to those where the ratio of doctors to population is sub-standard. As of August 1, 1943, 1,469 doctors were reported relocated, fifty-two percent to congested areas.

3. Limiting recruitment to twenty states and the District of Columbia, which are relatively well supplied; removal of physicians from sub-standard areas is minimized.

4. Helping local authorities to organize cooperative use of doctors and facilities for greater efficiency wherever consent can be obtained.

5. Improving and increasing hospital and clinical facilities. New facilities, largely financed under the Lanham Act administered by the Federal Works Agency, include forty-four health centers completed, and 153 hospitals erected or being built. As of June 30, 1943, recommended hospital construction on 451 projects had been approved by the President.

6. Continuing attempts to improve sanitary conditions and by Public Health Service emergency work in control of diseases. Seven hundred additional professional and more than three thousand nonprofessional personnel have been assigned to local health department work, malaria control, endemic typhus, industrial hygiene, etc.

7. Extensive work to control the spread of venereal diseases by breaking up districts of prostitution near industrial and military centers, by Army prophylaxis work, by establishing treatment centers where infected women can be cured of syphilis and gonorrhea through the new rapid treatment techniques and an attempt made to rehabilitate them.

8. Widespread case-finding work in tuberculosis through the new inexpensive x ray traveling units, set up by the Public Health Service under Dr. Herman E. Hilleboe, capable of checking on twenty thousand persons a week.

American Women Healthier

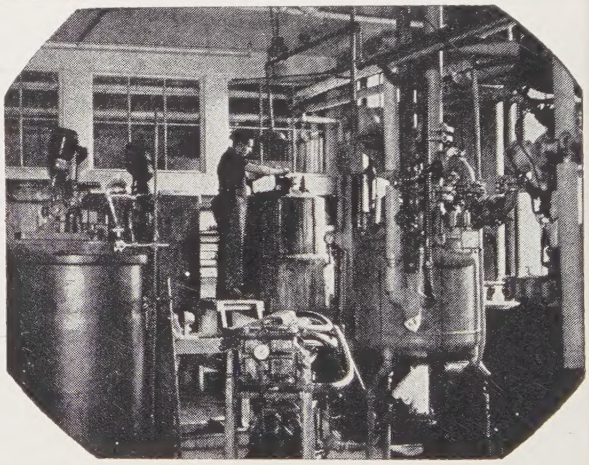
Women have benefited to an extraordinary degree by the increasing control over disease, says the Metropolitan Life Insurance Company (*Statistical Bulletin*, July 1943). This is shown by comparing the mortality of women for the two years (1915-1916) before our entry into the first world war with that for the two years (1940-1941) before Pearl Harbor.

During this twenty-five year period, the death rate among women insured in the Industrial Department of the Company has been cut almost in half. There were thirteen deaths in every one thousand women of ages fifteen to seventy-four in 1915-1916 as against only seven in 1940-1941. During this period the death rate among young women (ages fifteen to twenty-four) was reduced by seventy percent. In the age range twenty-five to forty-four, the reduction was nearly two thirds, and even at ages forty-five to seventy-four the death rate in 1940-1941 was fully one third below that recorded prior to the first world war.

The decline in the mortality from tuberculosis has contributed more than any other single factor to this remarkable record. Tuberculosis, with a standardized

(*Continued on page* 586)

Important Contribution to BILE ACID THERAPY



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rate of 206.5 per one hundred thousand for women at ages fifteen to seventy-four, was the leading cause of death prior to the first world war; in 1940-1941 it ranked fifth, with a rate eighty percent below that of the earlier period. The disease has continued to decline since 1941, although many women are working longer hours at more strenuous jobs and are living in overcrowded quarters.

In pneumonia the largest gains have been achieved since 1937, following the development of serum and chemotherapy. In 1940-1941 the pneumonia mortality among insured women was at the low level of 21.4 per one hundred thousand; in 1915-1916 the rate was 107.2.

The diseases associated with pregnancy and childbirth have also been shaply reduced since the first world war, and despite the recent rise in the birth rate, the trend of maternal mortality has continued downward.

Diabetes alone, among the important diseases, has increased in the past twenty-five years among women. While diseases of the coronary arteries have also shown an upward trend, part of the rise, at least, is due simply to better diagnosis and reporting. When the diseases of the heart, arteries, and kidneys, including those of the coronary arteries, are considered as a group, they do not show an increase in the twenty-five year period under review.

The splendid record for the socalled natural causes of death is matched by that for external causes. For suicide, the death rate among insured women in 1940-1941 was approximately two thirds the rate in 1915-1916, and for accidents the figure was three-fourths.

Women Nurses in the Army

To the Editor.—

A poignant reminder of this changing world is found in the footnote, page 208, of Colonel Percy M. Ashburn's, *History of the Medical Department of the United States Army,* which states that Lieutenant Colonel A. C. Girard, Chief Surgeon of the Second Army Corps, in March, 1899, unburdened his soul about the female nurse corps as follows:

"During the days of Camp Alger, Miss Barton offered the commanding general, female nurses for work in the division hospitals. I refused this assistance, partly because I was then under the belief that we were preparing for active service, and female nurses would be too much of an impediment in operation in the field. I was then not much impressed with the advantages of nursing of this character, as I had never had any experience with it.

"I learned better when I compared the work of the female nurses in the Red Cross Hospital at Meade with that of the men of the hospital corps in the division hospitals. At that time, the advantages of female nurses became more generally recognized throughout the Army; and when the Surgeon General informed me that female nurses could be employed in Southern hospitals I availed myself, however to a limited extent, of this opportunity, and used the nurses more as instructors and superintendents of wards than was done in most army hospitals at that time. There was still an expectation of active service, and as the hospital corps had been recruited up to the full allow-

(*Continued on page* 588)

IN DISORDERS OF GASTRIC FUNCTION

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GASTRON is an original extract of the organic and inorganic constituents of the entire mucosa of the hog-stomach, including the pylorus. The acidified and aromatized extract is incorporated in an aqueous-glycerin-propylene glycol menstruum which preserves the enzymatic activity. The preparation contains no alcohol. It is accurately standardized by assay.

GASTRON is indicated as replacement therapy in atrophic gastritis, and as an aid in the treatment of chronic gastritis. It is of value as adjunctive treatment in the anemias and in certain gastric deficiencies associated with convalescence and old age. It is worthy of trial in the nausea and vomiting of pregnancy.

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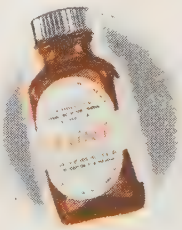
Hexital, with its component hexestrol, is significantly less toxic than stilbestrol. Recent clinical findings indicate that the combined use of hexestrol and phenobarbital (Hexital) affords a marked reduction in the incidence of nausea and other by-effects.

Hexital is available in scored tablets for oral use and affords efficient, convenient and inexpensive treatment. Each tablet contains 3 mg. hexestrol and 20 mg. phenobarbital. Average dose: One tablet daily, preferably taken on retiring. Literature available on request.



hexital

A Step Forward in Menopausal Therapy

ORTHO PRODUCTS, INC., LINDEN, N. J.

ance, I deemed it of greater importance to have them benefited by the training of these nurses than to do simply the menial work, while the nurses attended to the sick. I therefore did not deem more than ten or twelve female nurses desirable for each division hospital, and found that the number was sufficient. As a rule their behavior was satisfactory and their work commendable, but they were an expensive luxury, as they received more wages than the men of the hospital corps, and required more waiting on."

On page 367, the highly amusing but erudite Colonel tells us of the promotion scale: "to captain after three years' service, to major after twelve years, to lieutenant colonel after twenty years, to colonel after twenty-six years", but not a word about women nurses on short notice being advanced from lieutenancy to lieutenant-colonelcy while on a sojourn in Africa; it might be hard to laugh that off.

Rose Alexander
Los Angeles, Calif.

The Office of War Information has received reports from Holland that more than six thousand physicians have protested compulsory membership in a Nazi controlled medical association which preaches "deportation of the insane and sick persons" and the "sterilization of healthy people". The reference to the sterilization order was contained in a statement by the Dutch physicians and presumably attended to the sterilization of persons considered politically objectionable to the Nazis. The protest was based on a refusal to apply "National Socialist measures in the field of medicine."

Cerebrospinal Meningitis in Wartime

The most extensive outbreak of cerebrospinal meningitis in this country has occurred during the year 1943. Up to the end of July the number of cases reported was over thirteen thousand (*Statistical Bulletin,* Metropolitan Life Insurance Company). On this basis the total for the year will probably exceed seventeen thousand cases. This is equivalent to a rate of thirteen per one hundred thousand population, or fifty percent higher than the figures for the epidemic in 1929. The state worst affected has been Rhode Island with a rate to the end of July of eighty-nine cases per one hundred thousand population. In the first seven months of this year the number of cases in Rhode Island was more than forty times the average for a whole year during 1939-1941. Other states with very high rates of increase over 1939-1941 are: Maine, New Jersey, Missouri, South Carolina, Utah, and Oregon, and the rate of increase has been well above the average for the country as a whole in Connecticut, Delaware, Florida, Idaho, Washington, and California.

Prior to the present epidemic, the disease was at an extremely low ebb. In 1939-1941 cases reported for the entire country averaged less than 1,900 per year, with a low of 1,665 cases in 1940, or at a rate of 1.3 cases per one hundred thousand population. Early in 1942 cases began to increase in number and in April when the spring peak occurred, were double the number reported for April 1941. In the last two months of 1942 and continuing into 1943 the number of new cases increased rapidly. At the peak in the spring of 1943 they were more than ten times the average of the corresponding period of 1939-1941. There has been a sea-

(Continued on page 590)

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ESSENTIAL HYPERTENSION
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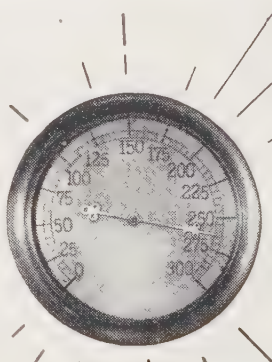

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IT'S RHYTHMIC TIMING that counts . . . in bowel function too.

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Vaginal Antiseptic Jelly

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sonal drop in cases since April, but the number in July was eight times the number of the 1939-1941 average for the month. Altogether, the 13,258 cases reported for the first thirty weeks of the current year were nearly six times the number for the same period of 1942, and nearly eleven times the 1939-1941 average. A large proportion of the cases reported in 1943 occurred in Army camps or Naval Training Stations. Cerebrospinal meningitis increased perceptibly during the first world war, but did not reach anything like the level of prevalence of the present war. Because of the high mortality from the disease at that time, it was an important cause of death in that war.

The treatment of the disease has been revolutionized by the sulfa drugs. In the general population, prior to 1939, the proportion of deaths to cases was more than forty percent, while preliminary data for 1942 for this country give a fatality figure only slightly more than twenty percent. Where facilities for diagnosis and early treatment are better than average, fatality rates of ten percent or less are experienced. In our Army camps the rate has been only three and one-half percent, as compared with thirty-four percent in the first World War.

As a result of the new treatment, the deaths from cerebrospinal meningitis will be much less, although the number of reported cases will be much greater.

Changes in Premarital Examination Law

Several minor changes in the procedures governing the operation of the premarital examination law in New York City are announced by the Bureau of Social Hygiene of the New York City Department of Health, in conformity with a recent amendment to the premarital examination law. For this reason the premarital statement formerly in use has been modified. The reverse side of the new statement now carries information and instructions both for the physician and the new applicant. The changes in procedure are as follows:

1. The Health Department Laboratory and private clinical laboratories will continue to perform the required premarital serological test. *No special forms or blanks* are required by the physician. As heretofore, blood specimens for such cases should be plainly marked "premarital". The laboratory, after completing the serological examination, will forward the necessary form to the physician. Only standard Wassermann and Kahn tests are acceptable for premarital purposes in New York City.

2. Application for a marriage license may now be made anywhere in New York State, irrespective of the bride's residence. Heretofore, application could be made only in the county where the prospective bride lived.

3. The City of New York has discontinued the one dollar fee for premarital reports issued by the Health Department Laboratory.

4. If the result of the serological test for premarital purposes is negative, a report need no longer be filed with the Health Department. Only positive reports are to be filed hereafter.

5. It is now permissible to use, for premarital purposes, a routine report of a serological test for syphilis, providing the test is not more than thirty days old. In such infrequent cases, the physician may obtain a premarital blank from the Health Department and fill in the necessary information regarding the blood test and physical examination.

0.5 Gm. Tablets, slotted to facilitate dosage supplied in bottles of 100, 500 and 1,000.
0.25 Gm. Tablets supplied in bottles of 100, 500, 1,000.
Sodium Sulfamerazine. 5 Gm. supplied in single Vial and units of six Vials (sterilized, powdered).
1 Gm. Vial of chemical reagent.
COMPRESSED TABLETS
MERAZINE
0.5 gram
SHARP & DOH
0.25 gram

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SIMPLIFIED • ECONOMICAL • SULFONAMIDE THERAPY

• *The Medical-Research Laboratories of Sharp & Dohme have developed a new compound which will simplify dosage and lower costs in sulfonamide therapy. This remarkable product is called SULFAMERAZINE. Its chemical designation is 2-sulfanilamido-4-methylpyrimidine (methylsulfadiazine).*

In comparison with sulfadiazine, sulfamerazine is more rapidly and completely absorbed from the gastro-intestinal tract and more slowly eliminated by the kidneys. Thus, smaller or less frequent doses of sulfamerazine are necessary to produce and maintain therapeutic concentrations of the drug in the blood and tissues.

Moreover, free and acetylated sulfamerazine are slightly more soluble in neutral or acid urine than are the corresponding forms of sulfadiazine. For these reasons, the possibility of drug concretions in the urinary tract should be less with sulfamerazine.

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Moreover, the smaller effective dose and longer retention of sulfamerazine have suggested the new drug's value as a prophylactic against certain infections such as rheumatic fever and gonorrhea. It is no more toxic than sulfadiazine and appears to be even safer, especially with regard to the possibility of urinary complications.

Detailed information may be obtained upon request from the Medical-Research Division, Sharp & Dohme, Philadelphia (1), Pa.

SULFA*MERAZINE*

Deaths from Rattlesnake Bite in the United States

In an article on the poisonous snakes of Southern California *(Military Surgeon,* July 1943) Major J. A. Magee, U.S. Army, says that in the United States there are five species of poisonous reptiles; namely, the harlequin snake, the coral snake, the copperhead, the water moccasin, and the rattlesnake. In the United States other snakes are harmless, but for the purposes of self-protection and treatment, bites by any snake should be considered venomous. There are now many hikers, fishermen, hunters and soldiers traveling through snake infested country and consequently many more opportunities for snake bites than in the past.

Major Magee states that ninety-nine percent of snake bites treated in the United States have been caused by pit vipers, of the genus *Crotalus.* A study by the Antivenin Institute shows that the importance of correct treatment for rattlesnake bites has been underestimated. A study of one hundred and fifty cases treated in one year in Texas shows the following results:

Of eighty-three cases treated with antivenin, seventy-eight recovered and there were only five deaths, or a six percent death rate. Had the antivenin been administered sooner, the death rate would have been smaller.

In the remaining sixty-seven cases in which antivenin was not administered, there were twenty-three deaths, or a death rate of 34.3 percent. The death rate from snake bite in Georgia, Florida and Alabama, has been from eighteen to twenty-five percent of the total number of victims bitten. In Texas, New Mexico and Arizona the death rate resulting from snake bites has been from twenty-five percent to thirty percent. The higher rate for the Southwest is accounted for by the fact that the Western diamond back rattlesnake is native to the area. This species is easily irritated, very aggressive, and is a large snake.

It is estimated that there are over fifteen hundred cases of snake bite in the United States annually. Most of the bites are upon the legs or feet. It is only the characteristic rattle warning which has prevented more snake bites. However, in the cases of nearly a dozen snakes killed recently in this vicinity, none gave such warning.

The interval of time between the bite and death varies considerably. A seven year old boy bitten on the cheek below the eye died before an eyewitness could reach him. A three year old girl bitten on the forehead by a large rattlesnake died within ten minutes. In fifty cases analyzed, the following results were recorded: eight victims died in an hour, thirteen between one and six hours, eighteen between one and twenty-four hours, four the second day, one in nine days, one in seventeen days, and one lived over a month.

Bites on the head and trunk are more dangerous than elsewhere. In fact, the mortality rate for bites on the upper extremities is practically double that for bites in the lower regions. Mortality among children under ten is at least double that among adults.

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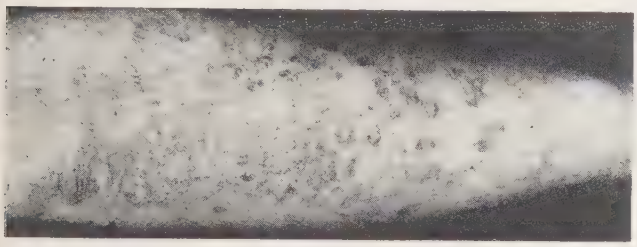

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Military Losses in 1942

In 1941, deaths in the armed forces of all belligerent nations were estimated at between 1,250,000 and 1,600,000 or possibly even more. This estimate compares with 300,000 military deaths in 1939-40 combined. It is too early to compare the military losses of this war with the losses during the first world war. It is known that in 1939 and 1940 the military losses were relatively small as compared with the first world war's figures, while in 1941 they were on a scale comparable to those in the first world war.

This was true also for the losses in 1942. According to statistics collected by the Metropolitan Life Insurance Company, during 1942 about two million soldiers and sailors lost their lives in action, or died from wounds or by drowning. Last year's losses were the greatest so far in the current world war, and probably exceeded the total fatalities in the previous two and a half years of the war.

American known dead in 1942 numbered approximately 6,100. To this total must be added a considerable number of missing. These were nearly forty thousand, including eleven thousand members of the Philippine Scouts. Altogether our military losses in 1942 probably were at least eleven thousand and they may have reached fifteen thousand. The Japanese losses, excluding China, in killed and mortally wounded have been probably at least one hundred thousand and possibly more than 125,000; two operations alone (Macassar Straits and the Solomons) cost Japan an estimated forty to seventy thousand troops by drowning. Japan's losses in China in 1942 were probably between twenty and forty thousand.

The number of Germans killed in 1942 was at least five hundred thousand and may well have reached seven hundred and fifty thousand. This disregards extravagant estimates both from Russian and other Allied sources. German losses increased sharply as time went on, particularly in the long fight in the Stalingrad area and in the defensive operations during November and December in the Don and Caucasus sectors. In North Africa, in aerial warfare over western Europe, in naval warfare in the Atlantic, in guerilla warfare in some of the occupied countries and in civil disturbances the Germans lost some forty to fifty thousand more men.

The Russians, according to the Metropolitan Life, unquestionably suffered more severe losses than the other belligerents, because they bore the brunt of continued action against German land and air forces. Their military deaths were probably between 750,000 and 900,000. Of the Axis satellites, Rumania has probably suffered most. It is likely that as many as fifty thousand Rumanian soldiers died on the various battlefields of Russia last year. Italy's death losses of military personnel in 1942 were comparatively light. Her death losses in North Africa are believed not to be high. From the figures available it is probable that no more than thirty to forty thousand Italian soldiers and sailors were killed in 1942.

Great Britain and the countries of the Empire suffered relatively few military deaths last year, because of the nature of the operations in which they were engaged. Except for North Africa, such operations were relatively limited in scope. It is likely that altogether British and Empire forces have lost not more

(*Continued on page* 596)

Triumphs in Triage*

*MEDICAL triage in war—front-line classification of casualties—is among the toughest assignments of the military physician. Instant diagnosis—often under direct fire—countless variations—new, baffling situations.

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New reprint available on cigarette research — Archives of Otolaryngology, March, 1943, pp. 404-410. Camel Cigarettes, Medical Relations Division, 1 Pershing Square, New York 17, N. Y.

than thirty thousand dead in all types of operations during 1942. This figure is in sharp contrast to the rather heavy losses in 1917, the corresponding year of the first world war, when on the western front alone nearly two hundred thousand of the British expeditionary forces were killed.

The Chinese have probably lost more than one hundred thousand men and Yugoslavia in her guerilla warfare has suffered the loss of many thousands of her soldiers. The Free French and the Vichy French together have lost one or two thousand in 1942. Hungary's losses have been material, but relatively few Bulgarian or Finnish troops have been killed.

Our Contributors

James Sonnett Greene, M.D., New York, N. Y., was graduated from Cornell University Medical College in 1902 and did postgraduate work at the University of Berlin, the Allerheilegen Hospital in Breslau, and the University of Jena. He began the practice of medicine in New York in 1902. In 1916 he founded the National Hospital for Speech Disorders, the only medical institution in the country devoted solely to the diagnosis and treatment of speech and voice disorders, and has been medical director since its founding. He was formerly professor of speech at the College of Dental and Oral Surgery, New York. In 1940 he was the recipient of a special gold medal from the American Laryngological, Rhinological and Otological Society for "distinguished pioneer service in the field of speech disorders". He has made valuable contributions to the literature of speech and voice disorders. His hobby is music; he plays the violin.

* * *

Michele Gerundo, M.D., Vermillion, S. D., was born in Italy and received his medical education in the Universities of Naples, Paris, and Mexico City. He is at present assistant professor of pathology at the University of South Dakota School of Medicine. He has made numerous contributions to the literature of pathology and biochemistry. His hobbies are amateur photography and writing fiction. He is a student of scientific literature chiefly concerned with pathology, physiology and biochemistry.

* * *

Edward L. Axelman, M.D., Darby, Pa., received his degree in medicine from Hahnemann Medical College and Hospital of Philadelphia in 1933. He is affiliated with the Crozer Hospital of Chester, and is chief of the eye, ear, nose and throat out-patient department of the Women's Homeopathic Hospital of Philadelphia, where he is also a lecturer on diseases of the nose and throat to the nurses. His hobby is watch and jewelry repairing.

* * *

Julius Bauer, M.D., Los Angeles, Calif., obtained his medical degree from the University of Vienna in 1910 and did postgraduate work at the University of Paris. He began as demonstrator at the University of Vienna in 1908 and successively became assistant, clinical assistant, docent and professor of clinical medicine. He was the head of the medical department of the Policlinic Hospital in Vienna. In 1939, he was appointed clinical professor of medicine, Louisiana State University School of Medicine, New Orleans, and at the present time he is clinical professor of medicine at the College of Medical Evangelists, Los Angeles. He is known particularly for his work in constitutional pathology and clinical endocrinology. His favorite recreation is music, especially the violin. He is an honorary member of the Harvey Society and the St. Louis Medical Society.

* * *

Meyer Kivett, LL.B., New York, N. Y., studied at New York University and obtained his degree in law from the New Jersey Law School. In the legal field he specializes in trial work, much of which is devoted to disability cases under life insurance and accident and health insurance policies. He is active in the work of charitable organizations and his favorite pastimes are reading good literature and sports.

* * *

Frederic Damrau, M.D., New York, N. Y., is a graduate of Long Island College Hospital where he received the Corydon L. Ford prize for the best dissection and later (in 1916) taught anatomy. During the World War he served as an officer in the Medical Corps from 1917 to 1921. He is an examiner in lunacy of the State of New York, and was formerly assistant attending physician on the neurological service at King's County Hospital and the out-patient clinic of Long Island College Hospital. He is now engaged in medical research on foods and drugs. His hobbies are tennis and contract. He is a member of the West Side Tennis Club at Forest Hills, New York.

* * *

Milton A. Lesser, B.S., New York, N. Y., is a graduate of the College of the City of New York. He has been associated with several industrial and research laboratories and has done research on cellular resistance in the department of experimental surgery, New York University School of Medicine, Fordham University. His hobby is collecting material on the history of medicine and pharmacology. He is a member of the American Chemical Society and other scientific societies.

* * *

Edgar A. Ferguson, Jr., Brooklyn, N. Y., is a chemist at the Metabolic Laboratory of Kings County Hospital where he has been engaged in problems of medical research for the past eleven years. His chief interest in his spare time is the study of astronomy.

* * *

Luke Magliaro, M.D., Boston, Mass., was graduated in medicine from Middlesex University School of Medicine, Waltham, Mass., in 1935. He is engaged in private practice and is doing research work on sulfanilamide and related compounds.

* * *

T. Swann Harding, B.S., Washington, D. C., is a bachelor of science in chemistry. He has done research work for many years, first on the rare sugars and carbohydrates generally, and then on biological chemistry in nutrition. He has published numerous purely scientific papers and since 1928 has been technical editor of a government department in Washington. He has also written for the popular press for many years, usually on various aspects of economics, and science.

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*MINCHIN, W. C.: *The germicidal and therapeutic action of garlic.* Practitioner, 100:145, 1918.

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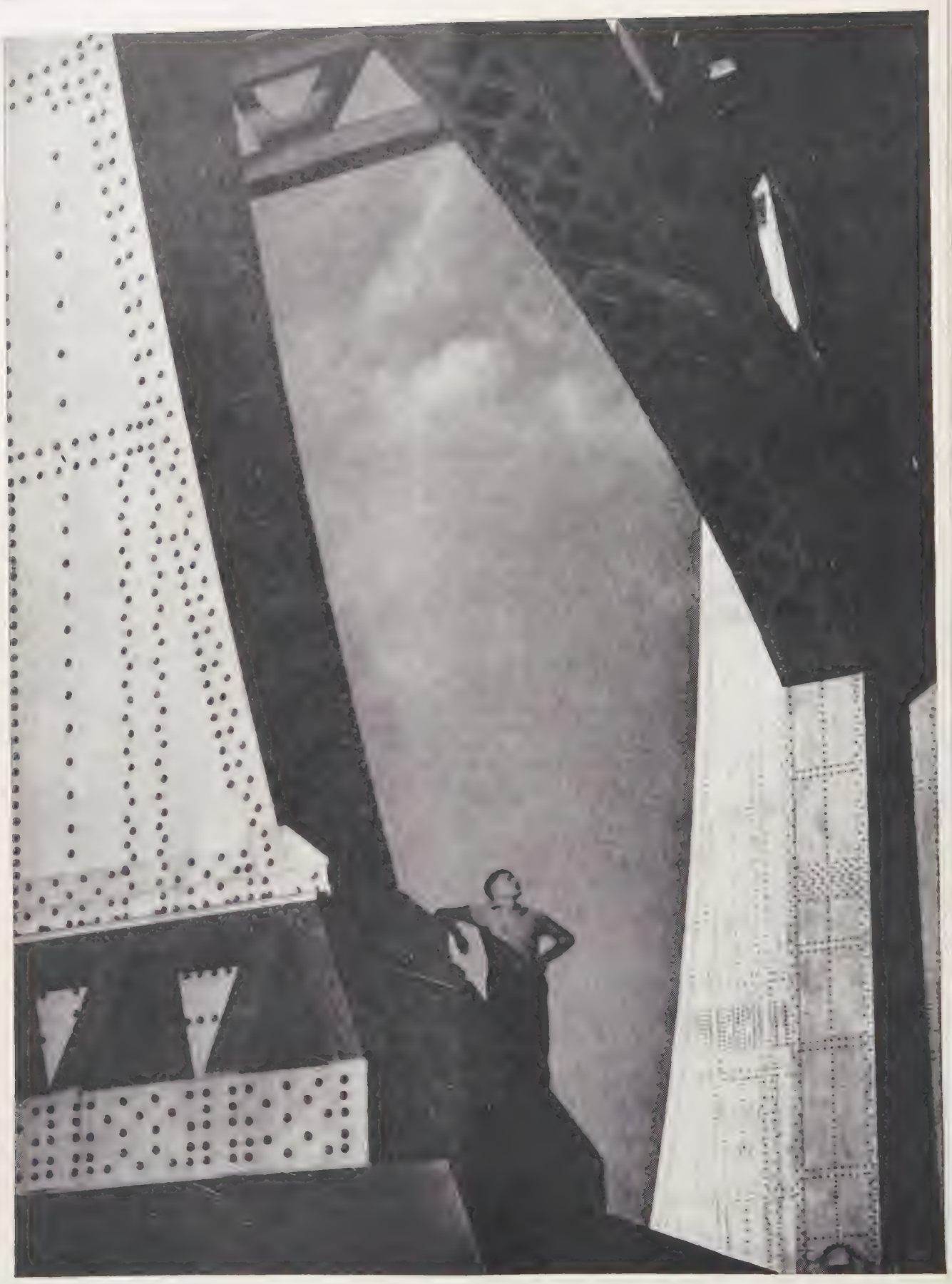

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SPEECH AND VOICE DISORDERS

*Etiology and Therapeutic Procedures**

JAMES S. GREENE
New York, N. Y.

Speech is an acquired skill, dependent on a highly complicated series of mechanisms. If we were to trace its development we would see that the acquisition and the subsequent retention of normal speech are contingent on many factors:

1. A normal peripheral mechanism: lips, tongue, teeth, palate, nasopharynx, glottis, larynx and breathing apparatus;
2. Adequate hearing;
3. A certain minimum degree of intelligence;
4. The integrity of the cerebral areas concerned with speech, i.e., the association areas, and the socalled sensory and motor speech areas;
5. The integrity of all the nervous connections concerned with speech: the afferent pathway to the sensory speech area, together with its cortical connections to the motor speech centers and the association areas, and the efferent pathways to the peripheral musculature;
6. An environment conducive to the development of normal speech, i.e., an environment which provides the individual with the opportunity to learn and the stimulus to use the correct symbols of speech;
7. Lastly, there is the vital factor of the emotions. Here we should also mention the endocrine glands, for they not only influence the emotions but in some cases directly affect the development and functions of the speech organs themselves.

It is obvious that an abnormality of any of the factors, faculties and mechanisms concerned in the development and the execution of the speech function will affect that function. Since those factors, faculties and mechanisms are so many and so complex, it naturally follows that the speech and voice specialist is confronted with a multiplicity of syndromes. In the interest of simplification we usually consider them under five major classifications.

Dysphonia

The first major classification includes the dysphonias, or voice disorders. Chief among these are hoarseness, paraphonia (falsetto voice), phonasthenia, psychophonasthenia, and aphonia. The first of these disorders is so frequently encountered that it is not necessary to elaborate upon it here.

Paraphonia.—Paraphonia, an abnormally high voice in the adult male, is occasionally due to an underdeveloped larynx. More often it is due simply to the failure of the larynx to assume a lower position in the neck during the pubescent period. The failure of the larynx to descend may be traceable to psychogenic factors, to faulty habit, or to endocrine dysfunction. Endocrine dysfunction, however, is less frequently an etiological factor than is generally supposed.

In general, prognosis is favorable in cases of falsetto voice. The larynx, if normally developed, can usually be lowered through manipulation. It must be so placed that the depressor muscles assume dominance, and this dominance must be reinforced by voice training. A period of psychotherapy may be indicated as a supplementary measure. When an endocrine dysfunction is present, glandular therapy is of course indicated.

Psychophonasthenia.—Psychophonasthenia is a tremulous, strained, pinched voice with pitch irregularities. As its name suggests, it is essentially psychic in origin. It is a symptom of neurotic anxiety, and its onset can usually be traced to some crisis in the patient's personal or professional life. Investigation will disclose, however, that the voice disorder is but the culmination of a long career of neuroticism. Evidence of emotional maladjustment can usually be traced as far back as the early school years.

Psychotherapy, both individual and group, is the most important factor in the rehabilitation of the patient with psychophonasthenia. Voice training and relaxation therapy are also recommended as supplementary measures.

Aphonia.—Aphonia, or loss of voice, may be organic or functional in origin. The most frequent organic causes of aphonia are probably acute laryngitis, tuberculosis, various central nervous system involvements causing paralysis of the vocal cords, and cancer. Therapy depends upon etiology, and in most cases is a matter of treating the underlying laryngeal condition. Where there is an irreversible disability, voice training is indicated to increase the efficiency of the impaired mechanism insofar as this is possible. (In cases of unilateral adductor paralysis of the vocal cords, for instance, the normal cord can often be stimulated to greater activity so that upon phonation it will move beyond the midline and thus partially compensate for the inactivity of the paralyzed cord.)

*Presented before the Medical Society of the County of Monroe, Rochester, N. Y., March 16, 1943. The paper was accompanied by slides and speech and voice recordings.

Functional (or "hysterical") aphonia simulates organic aphonia, but is, of course, psychic in origin. It is a form of neurotic "escape" from something in the environment which is distasteful to the individual or which threatens his security or happiness. The following is an illustrative case:

E. D., a divorcee, aged thirty-one, gave a history of aphonia of several months' duration. The anamnesis disclosed that she was about to be married again, to a man twenty-five years her senior. She admitted that she did not love her fiancé and was marrying him merely to gain security for her child. Since she had lost her voice only a few days before the time set for the wedding and the ceremony had been postponed for that reason, it seemed apparent that the aphonia was an "escape" from the distasteful situation which threatened. Her voice was readily restored, and she was advised to postpone the wedding for a year. There has since been no recurrence of the aphonia, and the patient has decided not to marry her elderly suitor.

The voice of the patient with functional aphonia can usually be restored by suggestion. However, if the patient is to be permanently benefited, symptomatic treatment must be supplemented by a period of psychotherapy.

Dyslalia

The second major group of speech and voice disorders comprises the dyslalias, defects of articulation due to faulty habit, environmental factors, mental retardation, or anomalies of the peripheral mechanisms concerned with the acquisition and execution of speech. The types of dyslalia most frequently encountered are delayed speech, oral inaccuracies, idioglossia, and harelip and cleft-palate speech.

Delayed speech.—As the term suggests, this is absence of speech at the age at which it would normally develop. The chief causes of this anomaly are impaired hearing and mental deficiency, although environmental factors are occasionally operative.

Oral inaccuracies.—This is an inclusive term referring to all the various articulatory defects characterized by the omission of sounds, the substitution of one sound for another, or the replacing of a correct sound by a defective one. Lisping, or sigmatism, is a common example.

Here again, the defect may be due to impaired hearing or to mental retardation; or it may be due to some congenital involvement of the cerebral speech area, in which case it is a form of developmental aphasia. (A child with such an involvement, although otherwise mentally normal, will usually find it difficult to master any of the language skills—speech, reading, writing or spelling.) In many instances, the defect is due to structural abnormalities; in other cases it is due to environmental factors, such as foreign language influence in the home or defective speech in some other member of the family.

Treatment depends upon the cause of the condition. The causative factors should be corrected or counteracted, if possible, and speech re-training should be instituted.

Cleft-palate speech.—This is, properly speaking, a form of oral inaccuracies. However, it presents so many special therapeutic problems that we usually consider it as a separate entity.

The first step in the rehabilitation of the speech of the patient with a cleft palate is, of course, operative repair. (If operative measures are not feasible or, because of scant and friable tissue, it is impossible to secure a complete closure, it may be necessary to fit the patient with an obturator.) The operation to close the cleft, however, seldom completely remedies the patient's speech defect. This is because the repaired palate necessarily lacks mobility and is often shortened by the operation, leaving an abnormally wide postnasal space and making it difficult for the patient to control the escape of air into the nasal chambers. Thus his speech is often characterized by various oral inaccuracies and, almost invariably, has an unpleasant nasal intonation. For this reason, speech reeducation is essential.

Dysarthria

The dysarthrias are the third major group of speech and voice disorders. They include all defects of articulation due to disease processes, injuries or other involvements of the central nervous system which affect the innervation and coordination of the speech musculature.

Pathological changes at any one of a number of sites may result in dysarthria. For example, lesions of the lower motor neurones that directly innervate the peripheral muscles of speech (the seventh, ninth, tenth, eleventh and twelfth nerves) will cause a partial or complete paralysis of the parts subserved by the neurones affected, with a resultant articulatory disturbance. Similarly, lesions in the cerebellum and its associated tracts, or injury to the cortical neurones of the speech areas and the corpus striatum, will also affect speech production and cause dysarthria.

Prognosis depends upon the site, severity, and nature of the pathological changes and upon whether these changes are static or progressive. Treatment must usually be prolonged, and specific remedial procedures must be adapted to the individual case. However, the general therapeutic program should embody relaxation exercises, training in muscular coordination and control, particularly control of the speech musculature, breathing exercises, and voice and speech training adapted to the individual needs of the patient.

Dysphasia

The dysphasias (or aphasias), the fourth major classification of speech and voice conditions, are essentially language disorders. They are due to disease processes, injuries or other involvements of the language areas of the cerebrum which affect the comprehension and use of the symbols of speech. Such involvements may be congenital (some children appear to be born with a general "weakness" in the language sphere), or they may be acquired through trauma, embolism, brain tumor, encephalitis, meningitis, degenerative brain diseases, or similar pathological processes.

Prognosis depends upon the nature of the underlying involvement. Occasionally, there is a spontaneous partial or complete recovery of the speech function as the acute stage of the pathological process subsides. Where there is no spontaneous recovery, or where recovery is incomplete, speech reeducation should be attempted. The remedial program must be adapted to the individual case, but in general it consists of daily speech drill to build up a new set of associations between the speech symbols and the objects and ideas they represent.

Dysphemia

Dysphemia, or stuttering, is the last major classification of speech and voice disorders.

Stuttering is a somatic manifestation of an emotional disorder based on a psychobiological variation of the organism. Although we do not as yet know the exact nature of this variation, it would appear to be an hereditary trait predisposing the individual to emotional instability and disorganization in general and to stuttering speech in particular. The stuttering itself is usually precipitated by some physical or psychic shock.

The outstanding symptom is the disturbance of the speech function. This is frequently accompanied by mouth contortions and by other facial tics and irrelevant movements of the body. The one other outstanding somatic finding is the lability of the autonomic nervous system balance. Frequently noted are increased reflexes, dyspnea, hyperhidrosis, and marked lability of the pulse and blood pressure, with unusual tachycardia when the patient is under emotional stress. An abnormally high white cell count is not unusual; the number of leucocytes may be as high as 14,000 and may decrease with the progress of recovery to within the normal range. A generalized tension is evident, and the patient often complains of insomnia and chronic fatigue. Emotionally, the adult stutterer is unstable, highly excitable, and overreactive to all types of stimuli. He suffers from a marked anxiety, is subjective, hesitant and apprehensive, and he demonstrates many disturbances in the field of personal relationships.

In treatment, it is necessary to distinguish two phases of stuttering: the primary, and the secondary.

The primary stage is the initial phase of the disorder before the child has developed anxiety symptoms and other characteristic personality deviations. Treatment in this phase is largely a matter of reaching the parents and, through them, removing unfavorable environmental influences and slowing down the tempo of living in the home. Emphasis should be directed away from the speech disorders. If speech work is indicated, it should be presented in the guise of a game and its aim should be to foster easy, unhurried performance. Drills on specific sounds or words should be avoided.

In the secondary stage of stuttering, treatment must be directed toward the reorganization of the whole personality. At our clinic, the first phase of therapy is aimed at increasing the underlying efficiency of the organism. To that end, eukinetics and relaxation therapy are introduced. The second phase of treatment is the breaking down of old unsound emotional reactions, habit patterns and attitudes, and the building up of healthy, constructive new ones. In this connection, we have found group psychotherapy invaluable. It is carried out in conjunction with a certain amount of speech reeducation, directed toward removing the stutterer's specific fears regarding speech situations, and is supplemented by individual interviews. The environment is so arranged as to allow the stutterer to face repeatedly and successfully the situations toward which he has had anxiety. At the same time, it submits him to gradually increasing pressures and thus prepares him to meet and to make adequate adjustments to the demands of reality when he again faces the outside world. Social activities—dancing, various clubs, and dramatic and choral groups—aid in the process of adjustment.

Conclusion

In closing this brief discussion of voice and speech disorders, I should like to point out that as the war progresses these conditions will undoubtedly show a sharp increase. There will be an increase not only in the functional disorders but also in defects due to actual injury. For instance, we can expect to see many more cases of dysphasia resulting from head wounds. It is, therefore, incumbent upon the medical fraternity to take a greater interest in the problems of the speech and voice sufferer and to be prepared to participate in his rehabilitation.

61 Irving Place

PSEUDO-ENCEPHALITIC LESIONS PRODUCED IN THE RABBIT BRAIN BY INJECTIONS OF CHOLINE*

MICHELE GERUNDO
Vermillion, South Dakota

A large amount of work has been published on the action of choline and its importance in the neurohumoral mechanism of the central nervous system. In this paper I shall not attempt to review the entire subject, but shall discuss some peculiar lesions produced in rabbit brains by choline intoxication.

It has been generally assumed that the blood vessels of the brain are provided with vasomotor nerves by the sympathetic system, but the existence of vasodilator fibres has generally been questioned. Cavazzani (1) has admitted that the cervical sympathetic contains some vasodilator fibres in addition to vasoconstrictor fibres. According to this author, the vasoconstrictor fibres normally prevail, but during acute anemic conditions of the brain, the opposite condition exists, with sympathetic stimulation producing cerebral vasodilatation. There are some experimental facts (2) which show that adrenalin, applied directly to the surface of the brain, produces vasoconstriction, but when injected into the blood stream, produces vasodilatation.

Other authors believe that the stimulation of the central end of the pneumogastric nerve provokes vasodilatation of the brain. With the discovery of the neurohumoral mechanism, Villaret and Bezançon (3) have demonstrated that choline, a vagomimetic substance, produces marked vasodilatation of the brain arterioles and capillaries. However, it must be pointed out that cholinergic fibres are not exclusively of the parasympathetic system.

Some years ago, I carried out some experiments with acetylcholine in an endeavor to find a drug which could be used in the treatment of mental disorders, and particularly dementia præcox. In previous investigations I had observed that patients suffering

*Read before the South Dakota Academy of Sciences, May 7, 1942.

from dementia præcox showed signs of sympathicotonia, and I therefore thought that perhaps the administration of choline, which is a vagomimetic drug and therefore a relative antagonist of the sympathetic system, would produce the same reactions. At that time metrazol had not been introduced into psychiatric practice as a form of treatment for dementia præcox. After producing catatonic stupor in rabbits and dogs with bulbocapnine, choline was injected to awaken these animals from their catatonic condition.

In order to determine the relative toxicity of acetylcholine, I selected twenty adult rabbits as test animals. Acetylcholine was prepared in 1:1000 dilution, and intravenous injections, beginning with one mg. and increasing up to five mg., were given every third day.

The injections produced tonic-colonic convulsions of short duration and varying intensity, followed soon after by difficult breathing, intense twitching of the muscles of the face and marked salivation, and, finally by paralysis of the respiratory muscles. Several rabbits, that died of asphyxia during the convulsions, showed at autopsy edema of the lungs, the heart in diastole, and marked congestion of the brain. Twelve rabbits survived until the tenth injection, at which time they were sacrificed. The brains were fixed in the ten per cent formalin and stained by various methods, including Nissl's technique and myelin stain. Grossly, the brains showed numerous pinpoint hemorrhages and marked congestion of the meningeal and cortical vessels.

Microscopic examination revealed marked congestion of the blood vessels throughout the brain. Red cells were seen in the perivascular spaces, sometimes in large numbers, but only occasionally hemorrhages were seen outside the spaces directly in the brain tissue. In other areas red cells and lymphocytes were seen together in the same perivascular spaces, and in still other areas lymphocytes alone formed the perivascular cuffs. Neurones in the cortex very commonly showed shrunken and dark-staining cytoplasm and blocky Nissl bodies. The meningeal vessels appeared congested, and lymphocytes, as well as red cells, were seen to form bands around the vessels or to lie freely in the meshes of the pia.

Scattered throughout the brain matter and, sometimes immediately in the subcortical areas, were found zones of disintegration, varying in size as well as in age, and resembling the areas found in post-vaccination encephalitis and sometimes in multiple sclerosis. They were usually found around a congested or occluded vessel or a small hemorrhagic area, but occasionally no vessels could be demonstrated. The central portion of the zone showed little affinity for basic stains and stained diffusely with erythrosin; it contained degenerated ganglion cells and fatty substances, presumably from disintegration of myelin. Around this central area were seen numerous glia cells, but typical globular scavenger cells were seldom found. Ganglion cells near these foci were seen surrounded by numerous neuronophages and clusters of glia cells.

It seems possible to reconstruct the various stages of transition of these zones of disintegration. At first a small area of necrosis becomes wider and the glia cells invade or surround it. In successive stages the zone is transformed into a uniform mass in which no cellular elements are visible, but a little farther from it, glia cells are forming what seems to be a limiting membrane. In a final stage, the necrotic area is replaced by a thick network of glia fibres and all the cellular elements disappear.

As to the mechanism of formation of these zones of disintegration it is presumable that excessive vasodilatation leads to stagnation with consequent anoxia and death of the delicate nervous elements, demyelinization and gliosis. Whereas in the case of encephalitis one may assume the rôle of a probable virus in the production of these foci, in our case the virus origin is out of the question and we must admit that they are the result of the effect exerted by choline upon the brain vessels and the brain matter.

To determine whether these lesions were the result exclusively of the action of choline, I carried out similar experiments on rabbits with histamine, tyramine and bulbocapnine, but in none of these animals were lesions found comparable with those produced by injections of choline. However, when experiments were carried out with lecithin, lesions similar to those of acetylcholine were reproduced, as possibly one would expect, considering the close relationship between lecithin and choline.

There has been a tendency to associate perivascular infiltration with inflammatory processes of the brain. Many of the chemical intoxications, like encephalopathia saurnina or arsenic encephalitis, never show findings similar to those we have just described. In chronic lead intoxication the histological changes are diffuse demyelinization, glia proliferation and perivascular edema; in arsenic intoxication the changes are brain purpura and, occasionally, larger foci of hemorrhage or diffuse hemorrhage.

We know that acetylcholine is a mediator of nerves and can be collected by immersing a cut end of a nerve in Ringer's solution, and that choline is secreted from the cut surface of the nerve only when the impulse travels along the nerve path and is not secreted, if the nerve is at rest. It is natural, therefore, to ask whether inflammation in the central nervous system could liberate large amounts of choline which in turn would produce the characteristic lesions we see in inflammatory diseases.

Acetylcholine probably does not exist in the brain in the natural state, but perhaps as a specific protein complex (4) or linked to the lipids of myelin. We do not know the full mechanism of the production of acetylcholine in the brain and nervous plexuses, nor how the production is affected by physiological conditions. For example, we know that glucose influences markedly the rate of formation of acetylcholine in the cat's superior cervical ganglion perfused with eserine, Locke's solution (5), and that tetanus toxin increases the acetylcholine content of the central nervous system. Some pathological changes, like change of pH or disturbances of the electrolytes, may presumably influence the acetylcholine content of the brain or may inhibit the activity of cholinesterase. Several authors have asserted that they found excess of choline in the blood and cerebrospinal fluid in diseases of the central nervous system, but their experiments have not been confirmed by successive investigations.

(*Concluded on page* 619)

Symposium on Internal Medicine

GENOPATHOLOGY*

With Special Reference to Essential Hypertension

JULIUS BAUER
Los Angeles, Calif.

In discussing the problem of regulation of the body weight and of obesity, M. Fishbein (1) made the remark: "Perhaps the problem will never be solved until human beings have learned the importance of heredity and eugenics in the building of sound tissues". The same remark would be appropriate with regard to numerous pathological states. They cannot be understood, at least not correctly, as long as those who try to do so ignore or minimize the importance of heredity. In Delafield and Prudden's *Textbook of Pathology* (1931), for instance, the subject of heredity is covered in little more than half a page among a total of 1339 pages.

One of the reasons for this situation and the obvious reluctance to pay more attention to genetic factors in the etiology of diseases is the erroneous idea that what the science of genetics may offer to the clinician is limited to the statement whether or not a particular morphological or functional trait of the organism is inherited and what type of inheritance it may show, whether dominant, recessive, sex-linked and so forth. As the latter statement is feasible only in a small number of inheritable traits anyway, it may seem worthless to spend time and effort on something which apparently has no direct bearing upon the treatment of patients. Actually, however, the situation is different.

If there is evidence of a hereditary factor playing a rôle in the etiology of a disease—and so far it is mostly recognized—the real problem emerges: The hereditary factor has to be analyzed as to its sphere and kind of action. Hereditary factors must have had a representation in the fertilized ovum as they have been transmitted to it from former generations. These representations in the germ plasm are known as genes or mendelian units. To acknowledge and include them into etiological studies is a logical demand just as cogent as it is for the physicist to operate with electrons, protons or neutrons, although nobody has ever seen such a thing as an electron or a gene. Physicists, however, seem to be less loath than physicians to spend more thinking about, and to draw inevitable logical conclusions from, perceptible facts. Physicians are more inclined to content themselves with facts and to consider results of pure logical thinking as unscientific. Yet they frequently overlook that what they consider to be a fact today may be recognized as fallacy tomorrow. On the other hand, what is to be gained by logical conclusions from irrefutable facts is the truth. To present figures is often far less scientific than to present results of logical thinking. "Advances in knowledge come often, not by addition of new facts but by a novel rearrangement of known material, giving new direction through a mental jump placing old knowledge on a new, a more manageable and more illuminated level" (Foster Kennedy,2).

If, therefore, it is recognized that heredity plays a part in the etiology of a particular disease, this disease belongs to the realm of medical genetics. In other words, it is, partially at least, a problem of *genopathology*. Some general facts about genes must be kept in mind if one tries to comprehend phenomena of genopathology. Nature is offering such phenomena in abundance and it is our job to interpret those spontaneous experiments of nature and to recognize the laws according to which they occur.

1. Genes are the potential energies localized in the chromosomes that account for the development of a full-fledged human being in the short period of nine months; that are at work throughout a whole lifetime determining the structure and function of the organs, their mutual relation and the response to various stimuli; that rule the tempo of evolution and involution; that account for the uniqueness of the individual psychosomatic personality; that represent the source of what we call individual constitution.

2. To characterize the respective part of both genes and environmental factors in building an individual E. M. East (3) made use of an analogy borrowed from photography. "The gene plan of the fertilized egg makes it like an exposed plate. The potentiality of a picture is here, waiting to be developed. The environment is the developer. It can make or mar the picture, but that picture will have the same general character in any event" (East).

3. In order to get a more precise conception of the genic structure of an individual, known as his genotype, as contrasted with his phenotype, that is, with the actual appearance of the psychosomatic personality, it may be well to realize another analogy. The relation of the phenotype to the sum total of genes, that is, to the genotype, is about the same as the relation of a well organized, big manufacturing plant to the sum of minutely detailed blue-prints, architectural, structural, commercial, and financial plans making up the whole organization of the future factory plant. In other words, the gene plan does not represent a sort of homunculus and the genes do not always correspond to particular morphological or functional characteristics perceptible in the completed human being. They are categories of their own. Genes for a definite stature and body proportions, for the shape of the nose or the pinnæ, the color of the hair or the iris, the amount and distribution of fat tissue accumulated, for various metabolic functions, mental traits and endowments, the speed of both maturation and wear and tear of organs

*From the College of Medical Evangelists, School of Medicine, Los Angeles, Calif.

and tissues, they all are gathered in a double set of chromosomes in the fertilized ovum. This, of course, has not the slightest resemblance to the actual appearance of an individual, just as the blue-prints do not have a likeness to the manufacturing plant.

4. It is becoming generally recognized that the old knowledge of ancient medicine is quite true: The individual has to be considered as a whole and not merely as the sum of his parts in order to understand both his physiological and pathological, physical and psychic behavior.

In spite of the modern, farreaching—perhaps too farreaching—specialization in medicine, the wholeness of the psychosomatic personality requires full attention in any therapeutic endeavor. The genetic aspect of the problem offers the biological basis. The unity and uniqueness of the individual as to both his body and his soul is evident in the fertilized ovum. In this single cell the constitution of the future individual is hidden. From this one cell the potential energy of the genes is spread throughout the completed organism. It becomes active and gradually exhausted in various parts of the body. Different genes rule over the differentiation, structure, and function of different cell groups throughout the lifetime. What has been an obvious unit represented by one single cell, the fertilized egg cell, becomes less readily recognizable as a unit after having been scattered over the innumerable cells of the completed body. Nevertheless, it remains a unit and has to be considered as such.

5. What is known today as "psychosomatic medicine" has been as old a concept as medicine itself. It sprang from a sound empiricism, that is, from careful observation of the sick. Its modern renaissance under a new title resulted from therapeutic exigencies. It should avail itself of the facts mentioned in the previous paragraph in order to get a scientific rather than a purely empirical foundation. Body and mind are an obvious unit in the fertilized ovum, they continue to be a unit in the completed person. A (latent) psychic element is an original constituent of each cell deriving from the fertilized ovum.

6. One of the fundamentals of genetics is the fact that, on the one hand, different genes may produce indistinguishable phenotypical effects, while, on the other hand, single genes may extend their activity to several quite different parts and functions of the body. Genes localized in the same chromosome are, as a rule, transmitted to the offspring combined with each other. A special example of this principle is the sex-linked type of heredity such as it is best known in hemophilia. The abnormal gene accounting for hemophilia is localized in the sex chromosome.

7. Each constitutional trait results from the interaction of two genes, the paternal and the maternal. One of those genes, as a rule, dominates, while the other is more or less suppressed and is called recessive. Both are known as allelomorphs. Alterations of genes are called mutations. Such alterations may occur in different directions, in other words, there may exist various alterations of one gene, known as multiple allelomorphism. The study of abnormal genes is often the only means of recognizing the existence and nature of their normal allelomorphs. In other words, our knowledge of the normal genetic structure is frequently aided or even made possible by the study of pathological genes. The action of a hereditary factor is not necessarily recognizable by studying the parents or grandparents or other relatives since it might have been transmitted as a recessive characteristic for many generations without becoming phenotypically manifest; i.e,, the absence of the same state in other members of the family does by no means rule out its genetic basis.

Endowed with these recollections of genetic principles one will look upon many clinical and pathological problems from a different angle. Wherever hereditary factors are involved the consideration of these principles is compulsory. Laboratory experiments concerned with particular organs and functions may in such cases be highly enlightening; they may, however, lead astray if they are not interwoven with the study of the whole individual.

Pathogenesis of Essential Hypertension

A classical instance of such an occurrence is the problem of *essential hypertension*. The ingenious experiments of Goldblatt and his numerous followers shed much light upon the mechanism of arterial hypertension resulting from renal pathology. The humoral mechanism of such an arterial hypertension has been clearly demonstrated and its nature studied. Thus we know far more about the pathogenesis of this renal type of hypertension today than we knew before Goldblatt's investigations. If, however, the modern trend of both clinicians and pathologists tends to identify essential hypertension with renal hypertension, they go awry. The renal type of hypertension as it occurs in glomerulonephritis, some cases of advanced chronic pyelonephritis, cystic kidney or increased back pressure caused by urinary retention in the pelvis for various reasons, represents but one variety of what may be called *symptomatic hypertension*. Other varieties of symptomatic hypertension are those caused by tumors of the suprarenals or the pituitary gland (Cushing's disease), and the high blood pressure resulting from spontaneous or experimental lesions of certain portions of the central nervous system.

Yet, what has been known since 1911 as *essential hypertension* conforms to none of those varieties. It is fundamentally different from all of them both clinically and anatomically. It is not attempted to repeat here the reasons for this statement (4, 5). Arteriolosclerosis of the renal vessels resulting in contracted kidney is not the cause but the consequence of hypertension. Hence ensues a vicious circle by superimposition of the renal variety upon the essential one of hypertension. History repeats itself also in medicine. Those who advocate today the renal origin of essential hypertension were preceded many years ago by an outstanding clinician, Romberg of Munich. His opinion, however, was rejected almost generally by the leading authorities in Europe.

Etiology of Essential Hypertension

The etiology of essential hypertension is known to be an inherited constitutional predisposition[1]. Other factors than this constitutional factor are of minor if

[1]The only publication of the last few years not confirming the hereditary etiology of essential hypertension is by Feldt and Wenstrand. Their data are based on the material of a life insurance company. It is doubtful, however, whether the applied method of investigation is suitable for this purpose. The results obtained are in contradiction to the daily experience of anyone with some clinical experience. (Feldt, R. H., and Wenstrand, D. E. W.: *Am. Jour. Med. Sc.* 205:61, 1943.)

any importance. The stress and strain of modern life, frequent psychic emotions, toxic agents as nicotin, disorders of the endocrine balance may be cooperating, casual, precipitating or aggravating factors, whose influence upon the development of essential hypertension amounts to nothing without the basic premise of an inherited *anlage*. Essential hypertension, therefore, should better be called *constitutional hypertension*.

It has been pointed out elsewhere (4, 6) that the abnormal gene representing the constitutional predisposition to essential hypertension extends its activity upon a bodily function rather than a particular organ. Its normal allelomorph guarantees the relative constancy or homeostasis of normal blood pressure. The normal gene or gene-complex rules over a complex device adjusting the peripheral vascular bed as a whole to physiological demands of daily life and to occasional extraordinary turmoils. It implies: (a) a normal elasticity and normal reactivity of the arteriolar (and more generally, vascular) walls to nervous and humoral stimuli; (b) a normal function of the involved parts of the nervous system, composed of the afferent nerves, particularly the socalled blood pressure moderators (the carotid sinus nerve, and the depressor nerve), the involved bulbar, the superimposed diencephalic and higher cerebral as well as the lower spinal centers and tracts, and the efferent autonomic vasoconstrictor and vasodilator nerves; (c) the proper and adequate liberation of hypertensive and perhaps hypotensive hormones, which, in turn, depends on a normal function of certain endocrine glands, chiefly the suprarenals, and their prompt and adequate response to nervous and perhaps humoral stimuli. Those are only the main principles involved in the integrative mechanism securing a relative constancy or homeostasis of blood pressure.

Those who inherited the unfortunate constitutional predisposition to essential hypertension show signs of an insufficiently stabilized mechanism securing the homeostasis of blood pressure and tend to raise the average blood pressure level more or less gradually. Hypertensive stimuli such as cold, muscular exercise, cigarette smoking, an epinephrine injection or psychic emotions elicit an excessive response as far as the blood pressure is concerned (4). The more readily hypertension is apt to cause structural changes in the small arteries, chiefly of the kidneys, the faster the disease progresses. What is known as malignant hypertension is one end link of the chain, blood pressure rising slowly through a life-time of many decades, without particular impairment of bodily functions, is the other. There are no sharp limits between them.

What matters is the conclusion, necessarily resulting from clinical and anatomical facts, that the abnormal gene concerns more than one particular part of the complex mechanism of blood pressure regulation. It seems justified to assume that all parts involved in this mechanism are concerned in various degrees: the blood vessels, the nervous system, and the endocrine factors. The attempts to classify cases of essential hypertension into a renal, nervous, endocrine, vascular or metabolic variety (7, 8) are frustrated by the fact that all these varieties—as far as they actually concern essential and not symptomatic hypertension—are genetically identical (4).

It might be well to pay more attention to the mental side of hypertensive patients who are known to be frequently of a nervous, high strung temperament and emotionally unstable. It is vain, however, to assume (9) that a particular psychological pattern, such as emotional tension due to chronic repressed hostility and inhibited aggression ("chronic rage"), should bear a specific relationship to hypertension. This psychological situation is by no means specific of anything. Nor is a particular body build characteristic of essential hypertension (6).

Gull in his famous lecture delivered in 1872 at Guy's Hospital in London (recently recalled by N. M. Keith, 10) demonstrated a much hypertrophied heart, and a very contracted kidney. He called it "narrow pathology" to be satisfied with explaining the hypertrophy of the heart by the wasting of the kidney. "The systemic capillaries, and, had it been possible, the entire man, should have been included in this vase, together with the heart and the kidneys; and then we should have had, I believe, a truer view of the causation of the cardiac hypertrophy, and of the disease of the kidney." (Gull).

Is it not a "narrow pathology" or better a "narrow pathological physiology", too, if only one part and not the total of the mechanism involved with the regulation of blood pressure is taken into consideration and made responsible for essential hypertension?

Quite a similar reflexion has, in my opinion, to be applied to many pathological states. That has been pointed out elsewhere, particularly with regard to obesity (11, 6), diabetes mellitus and disorders of growth, development and sexual differentiation (12, 6). Medicine can no longer dispense with the aspects offered by genetics. Genopathology is the only basis from which a thorough understanding of the wholeness and uniqueness of an individual person can arise.

Summary

1. Genopathology, that is, the study of abnormal genes, deserves more attention than it is usually given by both clinicians and pathologists.

2. Some general facts about genes and their action are recalled.

3. The genotype as the sum total of the genes of an individual is being compared with the sum of blueprints, commercial and financial plans of a manufacturing plant. The genotype has not the slightest resemblance to the actual appearance and functioning of an individual person, just as blue-prints and plans do not have a likeness to the manufacturing plant.

4. The wholeness and uniqueness of an individual, his psychosomatic personality, can be comprehended only genetically.

5. Essential hypertension is genetically determined. It should, therefore, be called constitutional hypertension as contrasted with symptomatic varieties of hypertension, such as the renal, endocrine or nervous variety.

6. The abnormal gene or gene-complex accounting for constitutional hypertension extends its activity upon all factors involved with the maintenance and regulation of normal blood pressure.

References

1. Fishbein, M.: The frontiers of medicine. In *Biology in Human Affairs* ed. by E. M. East. Whittlesey House, New York, 1931, p. 229.

2. KENNEDY, FOSTER: The interrelationship of mind and body. *J. Mount Sinai Hospital* 9:607, 1942.
3. EAST, E. M.: Heredity. In *Biology in Human Affairs* ed. by E. M. East. Whittlesey House, New York, 1931, p. 181.
4. BAUER, J.: Essential hypertension, its nature and etiology. *Acta Med. Scandin.* 108:18, 1941.
5. DOCK, W.: Essential hypertension *J.A.M.A.* 120:147 (Sept. 12) 1942.
6. BAUER, J.: *Constitution and Disease. Applied Constitutional Pathology.* Grune and Stratton, New York, 1942.
7. SCHROEDER, H. A. and STEELE, J. M.: Studies on essential hypertension. *Arch. Int. Med.* 64:927, 1939.
8. WILLIAMS, J. R. and HARRISON, T. R.: Clinical pictures associated with increased blood pressure. A study of one hundred patients. *Ann. Intern. Med.* 13:650, 1939.
9. WEISS, E.: Psychosomatic aspects of hypertension. *J. A. M. A.* 120, 1081 (Dec. 5) 1942.
10. KEITH, N. M.: Pathological studies of the arterial system in severe hypertension. *Proc. Staff Meet. Mayo Clinic* 14:209 (April 5) 1939.
11. BAUER, J.: Obesity, its pathogenesis, etiology, and treatment. *Arch. Int. Med.* 67:968, 1941.
12. BAUER, J.: Die Beziehungen der Vererbungslehre zur Endokrinologie. *Wien klin. Wchnschr.* 48, 1003 (Sept. 6) 1935.

LEGAL ASPECTS OF HEART DISEASE

MEYER KIVETT
New York, N. Y.

The importance of heart disease as a health and economic problem is being slowly appreciated, but still has not received the attention as a legal problem which it rightfully deserves.

The magnitude of the proposition can be realized when it is found that the death rate for heart disease is twice that of its closest rival, cancer, and about three and one half times as great as tuberculosis. Sufferers from heart disease greatly exceed in number those who die from it in any one year. In New York City, while there are no accurate figures, a conservative estimate of people suffering from heart disease is well over one quarter of a million.

There are many different forms of heart disease, but four stand out as of paramount importance:

1. Rheumatic heart disease, which is a disease of childhood and early adult life.
2. Syphilitic heart disease, which usually appears in age groups from thirty to fifty years.
3. Heart disease due to hypertension, which usually appears from forty years on.
4. Heart disease due to arteriosclerosis, which usually appears after age sixty.

Many legal problems concerning heart ailments are medically involved and are not subject to positive proof, whether by the aid of clinical findings or subsequent portmortem examination.

For the purposes of this article we will omit from our discussion the effect of trauma as the cause of a heart ailment. This subject from a legal angle has been explored very little and even medical science has not yet promulgated any definite stand on the subject.

I shall endeavor to discuss heart ailments as a disabling disease with particular emphasis as it becomes important under the disability provisions of life insurance policies and accidental death and double indemnity clauses.

I. Heart Disease as a Total and Permanent Ailment

Practically all disability provisions of life insurance policies provide certain benefits "where the insured becomes totally and permanently disabled as a result of bodily injury or disease so as to be prevented for life from engaging in any business or occupation and performing any work for compensation or profit".

A recent estimate made by an insurance company states that heart disease is the cause of ninety percent of its payments under the disability benefit provisions of its policies. I have no doubt that this proportion is true with most, if not all insurance companies. This being so, the average legal practitioner is confronted with the proposition to determine when if at all a client comes within the purview of the above quoted clause, first, because of his or her ailment and secondly, whether the ailment is totally and permanently disabling.

To prepare properly a heart case for trial, every objective test known to the medical profession should be made in addition to a full and complete history and family traits.

Under objective tests, we have electrocardiograms, orthodiagrams, x rays, exercise tolerance tests and physical examinations.

These tests may throw sufficient light upon the case to arrive at a definite diagnosis and prognosis. The trial lawyer should be able to read electrocardiograms; must know the significant abnormalities shown by these electrocardiograms; must differentiate between the various leads and the significant changes in each lead—the effect of an exercise tolerance test upon the patient as shown by the various leads in the electrocardiograms. The careful practitioner may draw a significant point from the orthodiagrams and x rays and, above all, the results of a complete physical examination.

It is indeed foolhardy for the general practitioner to attempt to try a "heart" case without this knowledge for he can be assured that the insurance company lawyer is well equipped "medically", for he tries such cases almost daily.

What then if all of the above named tests are negative and show no objective findings as to heart disease?

Does this mean that the assured is free from heart disease? Decidedly not; the absence of any objective findings does not rule out heart disease. This is only too well illustrated at a postmortem examination. Very often a patient is examined by a heart specialist, whose diagnosis is "no heart ailment" and his prognosis is a "long life", and the patient dies within a few weeks or days after such examination. Upon a postmortem examination, it is then—for the first time—found that the patient had a damaged or bad heart. Medical science has not yet solved the real reason for this. The human body in some way is not always amenable to

examination. The various clinical tests of the doctor are not fool-proof to a true and complete diagnosis.

We now come to the situation where the question to be answered is, when is the heart disease of the particular insured person totally and permanently disabling?

To give it a strict and narrow interpretation, it becomes necessary for an insured person to be confined to his bed to benefit from this provision. Of course, neither was the insurance contract sold with this understanding nor is it a reasonable interpretation. The courts have wisely determined that the disease must be so disabling as to prevent the assured from engaging in his vocation or that vocation for which his talents are reasonably suited. This then becomes a matter of degree and dependent upon the particular facts of the case. In this connection it is interesting to note that a great many jurisdictions outside New York have held that an assured is totally and permanently disabled if he is pronounced so by *medical doctors* regardless of whether or not he is engaged in remunerative work at his own risk to his health.

It is easily realized that the line of demarcation of one who is and one who is not totally and permanently disabled, in order to secure the benefits of the disability provisions is not always clear. It requires not only a comprehensive knowledge of the law but also sufficient information as to medical proof to come within the various decisions of this state. It is work for a specialist who has tried a sufficient number of such cases to give him the proper "pulse" of a case so that the vision of ultimate victory is clear. It often happens that doctors who are both honest and desirous of helping the assured, nevertheless do exactly the contrary, due solely to a lack of the various elements that comprise sufficient proof in a total and permanent disability case.

There is this one admonition that I can advance to the members of the Bar: Do not gamble with your client's case, but secure the advice and assistance of an expert in the field; the client has only one day in court, and he should have the best advice that is available.

11 West Forty-second Street.

THE PROSTIGMIN TREATMENT OF DEAFNESS AND TINNITUS

EDWARD L. AXELMAN

Darby, Pa.

Ever since 1939, when Davis and Rommel (1) first reported the successful use of prostigmin in deafness and tinnitus aurium, interest in the therapeutic possibilities of the drug in this condition has continued, as is evidenced by numerous published reports (2, 3, 4, 5). Despite adverse comment, particularly that of Houser et al (6), the already impressive number of cases, which definitely appear to have been benefited by prostigmin, grows larger. To the total published experience in treating deafness and tinnitus with prostigmin, are now added the results obtained in thirty-one cases recently reported from the author's practice.

Rationale

The exact mechanism by which prostigmin treatment brings about improvement in many cases of deafness and tinnitus is not yet definitely established or understood, although its efficacy is seemingly quite considerable. Therefore, the chemistry and pharmacology of the drug will be briefly reviewed in an effort to correlate these with the aural pathology which is being treated.

Prostigmin is a synthetic compound resembling physostigmine (eserine) but possessing a less complicated structure than the latter and exhibiting greater stability. Chemically, it is the dimethyl-carbamic ester of 3-oxyphenyl-trimethyl-ammonium methyl sulfate. Its pharmacological action is similar to that of physostigmine, but its administration is attended by less disturbing by-effects. Presumably by inhibiting the action of cholinesterase upon acetylcholine at myoneural junctions, prostigmin restores muscle strength and power. An important factor in the transmission of nerve impulses, acetylcholine is a normal product of nerve metabolism and is both the result of the arrival of the impulse at its nerve ending and the means by which the impulse is further transmitted to the muscle. Cholinesterase, an enzyme also normally present in tissues, destroys acetylcholine. Prostigmin inhibits destructive action of this enzyme, thus allowing more prolonged and efficient action of acetylcholine in nerve impulse transmission. It is for this reason that the drug is a specific in myasthenia gravis.

The pathology responsible for deafness or tinnitus often cannot be determined, but it is reasonable to assume that in the great majority of cases of these disorders, a pathological condition in the middle ear, the inner ear, or the cochlear nerve is the causative factor. Disease of these structures may constitute a wide variety of lesions. Some of these lesions would seem to be amenable to the action of prostigmin; others definitely not. Davis and Rommel thought that the effectiveness of prostigmin in deafness might be due to the following hypothesis: The muscles of the face and ear have a common embryological origin and innervation (trigeminal and facial nerves). Since the facial muscles in myasthenic patients regain normal function after prostigmin has been administered, a somewhat similar phenomenon is thought to occur in otological muscles in certain forms of deafness. The fact the prostigmin has been reported to be efficacious in trigeminal neuralgia lends credence to this hypothesis.

Prostigmin is also a peripheral vasodilator and this action, too, may explain its value in some cases. For example, there may be cited instances in which the hearing disorder or tinnitus is wholly or partially due to local vasomotor imbalance or constriction. Similarly, long continued aural ischemia, through increased calcification, can interfere with normal articulation of the small bones in the ear.

Procedure

The plan of treatment originally advanced by Davis and Rommel included attention to general health, treatment of any local aural disorders, injection of one cc.

of prostigmin methylsulfate 1:2000, two or three times weekly, plus the oral administration of prostigmin bromide tablets, fifteen mg., three times daily. In the present study the same general procedure was followed, except that the injections were given only once or twice weekly and were not supplemented in every case by the tablets. Appropriate adjuvant treatment was administered for nasal polyps or obstruction, tubal catarrh, hypertension, sinus disease, and similar conditions thought to be contributing etiological factors. The cases were unselected, i.e., no attempt was made to choose only those patients who might theoretically be expected to respond to prostigmin.

Case Reports

CASE 1.—W. D., Jr., male, aged eleven years. This was a case of recent chronic otitis media. The patient complained of dull hearing in his left ear. On testing with tuning forks whispered words and a watch, closing the good ear, it was found that hearing in the left ear was sixty percent. Starting Jan. 30, 1943, the patient was given one cc. 1:2000 prostigmin at weekly intervals, and on March 13th by the same tests hearing was found to be ninety percent. After one month the tests will be repeated and more prostigmin given if necessary. No other treatment was given this patient except local cleaning and treatment of the otitis media.

CASE 2.— M. W., female, aged sixty-eight years. The patient complained of deafness which had grown progressively worse during the past ten or twelve years. She was first seen in Dec. 1940, at which time hearing in the left ear was ten percent and in the right ear thirty percent. The patient was almost completely deaf to the spoken word.

On examination the patient was found to have a chronic tubal catarrh without tinnitus. There was no evidence of nerve deafness, or other cause of deafness. The patient was politzerized and given injections of prostigmin 1:2000 twice weekly for three weeks, then weekly until March 29th. She showed continuous progressive improvement during the course of treatment. Examination on May 29th showed ninety-five percent hearing in both ears. The patient felt better physically. On July 11, 1941, she was re-examined, and her hearing was found to be the same as on May 29th. On Sept. 27th she was examined again, and her hearing was found to be still good without extensive tests. The same tests were used as in Case 2.

CASE 3.—B. J., female, aged nineteen years. The patient was first seen on March 1941, when she showed total deafness in both ears of three year's duration. Complete examination showed nothing except tubal catarrh, loss of appetite and loss of weight. There was a slight dripping from the posterior nasal passages. Air conduction was very poor, bone conduction good, and she could hear nothing below a loud shout.

The patient was politzerized and advised to use a nasal douche. Thiamin chloride three mgm. three times a day by mouth was prescribed. No improvement was noted after four weeks and on April 18th treatment with prostigmin and politzerization was started, and given once weekly for seven weeks. After the first week the patient heard the ticking of a watch. On May 2d, she said she heard people talking around her at times. On May 9th, there was no further improvement. After five injections, her hearing was much improved, and on May 22d, we used the tuning fork tests and found she was able to hear low tones. There was no further improvement until June 19th when it was found her hearing was eighty percent by tests. Treatment was discontinued and the patient was not seen again until Aug. 11th, when hearing was still eighty percent in both ears.

On Nov. 6th the patient was tested again and found to have one hundred percent hearing in the left ear and eighty percent in the right. On Feb. 12th, she was seen again and further improvement was found in the right ear. When seen on May 27, 1942, there was slight regression of hearing in both ears and on Sept. 10th the hearing was again eighty percent in the right ear and one hundred percent in the left. On Nov. 12th, hearing was one hundred percent in the left ear and ninety percent in the right. The patient was not politzerized after June 1942. She was feeling fine at that time and had gained eight pounds and was eating well. No thiamin was given during the prostigmin treatment. The tinnitus had disappeared after the second injection of prostigmin.

CASE 4.—C. B., colored female, aged forty-nine years. The patient complained of tinnitus and dull hearing for the four-year period prior to May 1942. Hearing was fifty percent in both ears; she could hear high tones. We decided that this was nerve deafness with hypertension and prescribed thiamin chloride, three mgm. three times times a day, for a period of four weeks, with no improvement in deafness or tinnitus. The high blood pressure was treated separately, successfully.

After four weeks all therapy was discontinued and weekly injections of one cc. 1:2000 prostigmin was started. After eighteen injections hearing was almost one hundred percent in both ears, but tinnitus persisted. Prostigmin had no effect on blood pressure.

CASE 5.—Mrs. E. B., age not known. The patient complained of dull hearing for one year in the left ear only. Starting Jan 9, 1943, the patient was politzerized and given injections of one cc. 1:2000 prostigmin weekly for four weeks. At the end of this time, hearing was one hundred percent.

CASE 6.—H. E. B., male, aged forty years. The patient, who was first seen Jan. 21, 1940, complained of dullness of hearing in both ears and pressure in right ear, for at least three years. Impacted cerumen was removed from both ears and the patient heard well in the left ear, and hearing was sixty percent in the right. It was decided that this was nerve deafness with some tinnitus. The use of a nasal spray was advised and the patient was politzerized once to be sure the tubes were all right. Treatment with prostigmin was begun on Jan 27th and the injections were given weekly up to March 13th. Tinnitus disappeared completely and hearing was one hundred percent. The patient has not been seen since.

CASE 7.—R. B., female, aged twenty years. The patient complained of severe headache and dull hearing for a little over a year. She was last seen May 16, 1942, after receiving three injections of 1:2000 prostigmin at weekly intervals. Headaches were gone and hearing was somewhat improved. She has not been seen since.

CASE 8.—W. B., male, aged six years. The patient's mother complained that he could not hear when she called him. Examination showed enlarged tonsils and adenoids and nothing else. The mother refused to have

these removed. Four weekly injections of 1:2000 prostigmin were given with no improvement and with no untoward results. Later removal of tonsils and adenoids completely relieved the condition.

Case 9.—M. B., female, aged eighty-one years. The patient complained of deafness which had gradually grown worse over a five-year period. Examination revealed extremely severe tubal catarrh and associated nerve deafness. We were not too optimistic about the results of any treatment in a patient of this advanced age, but started with politzerization and weekly injections of prostigmin 1:2000, one cc. Five such treatments were given and a nasal douche was prescribed. After five weeks hearing was only slightly improved.

Case 10.—Mrs. M. B., aged thirty-four years. The patient complained of severe tinnitus of two years' duration. She was first seen on April 9, 1942, when examination revealed no cause for tinnitus. Eleven weekly injections of prostigmin 1:2000, one cc., were given with no response. There was no deafnes in this case, and the cause of the tinnitus was not found.

Case 11.— R. B., female, aged thirty-two years. The patient complained of dizziness and dull hearing of two years' duration. She had been treated elsewhere, with no relief. Examination revealed low blood pressure and overweight, which were successfully treated. Deafness was found to be due to chronic tubal catarrh.

Prostigmin 1:2000, one cc. was given weekly for eight weeks up to March 4, 1943. Dizziness completely disappeared and hearing was one hundred percent. We feel that prostigmin was of value in preventing constipation usually encountered in connection with reducing diets.

Case 12.— C. C., female, aged fifty-two years. The patient was first seen on Dec. 1942, when she complained of noises in both ears. Examination revealed dullness of hearing in both ears due to impacted cerumen, and a blood pressure of 190/100. The high blood pressure was treated successfully and the removal of cerumen caused cessation of dullness in hearing, but the noises continued.

On Jan. 8th, one dose of one cc. 1:2000 prostigmin was given, and another on Jan. 26th, after which the noises stopped. The patient has not been seen since but she is still taking prostigmin bromide tablets, which were prescribed, three tablets three times a day, along with injections. The druggist says the tablets are not bought regularly, only once in a while.

Case 13.—E. C., male, aged thirty-five years. The patient complained of chronic otitis media on the right side, and dull hearing. He was first seen on Mar. 29, 1938, and the otitis media was treated then and on April 1st, removing débris and cauterizing. The patient was not seen again until Sept. 12, 1941, when he complained of severe deafness in the right ear. We suggested tonsillectomy and prostigmin treatment. The first injection was given Sept. 12th, one cc. 1:2000; the second on Sept. 17th, and the third on Sept. 27th. Examination revealed that hearing had been good for a few days and had then regressed. The patient was politzerized and given an injection of prostigmin, repeated one week later and again one week later, when the patient said his hearing was improving but was still not one hundred percent. The patient has not been seen since.

Case 14.—R. C., male. His age was not known, but he was in his late fifties. He was first seen Jan. 1942, when he complained of tinnitus and dullness of hearing, found to be due to tubal catarrh. The condition had been bothering him for over a year. We started politzerization and prostigmin 1:2000 one cc. weekly and suggested a nasal douche. This was continued for three weeks, with steady improvement in hearing. On March 24th hearing was quite good but tinnitus persisted, and the patient complained of nervousness. Sedatives were prescribed. On April 9th he felt better and the tinnitus had left. On April 16th he was politzerized and given prostigmin. Seven weekly treatments were given and on May 22d he was much better. One month later he complained of buzzing in his ears, and a week later his hearing was excellent but he still complained of buzzing. He has not been seen since. The patient had twenty-one injections of prostigmin in all, with alternate relief and return of symptoms of tinnitus. We feel that noise at work may have been a contributing factor in the tinnitus. His hearing was completely normal after six injections.

Case 15.— F. E., male, aged forty years. The patient complained of deafness in both ears. Examination on April 18, 1941, revealed tubal catarrh. After six weekly treatments with prostigmin one cc. 1:2000 and politzerization, he felt no better but said that his hearing was better at times. After May 10th, the patient was not seen again.

Case 16.— Mrs. A. F., age unknown, was first seen Oct. 17, 1939. Examination revealed tinnitus and deafness, found to be nerve deafness. She was treated with prostigmin 1:2000, one cc. weekly; no other treatment except nose drops. After three weekly injections the patient said the tinnitus was relieved at times, and was worse during rain storms. On October 20th the injections were supplemented with prostigmin bromide tablets, one three times a day. On Nov. 3rd the patient was definitely improved. On Nov. 7th, she was politzerized and given a prostigmin injection, and again on Nov. 11th. On Nov. 14th, she was treated again. She said the tinnitus was rarely present and hearing was definitely improved. The patient was not seen again, and I was informed that she had died suddenly.

Case 17.— J.A.G., male, aged thirty-four years, first seen March 3, 1939. The patient complained of dulled hearing and vague noises over the past year. Treatment was started with politzerization and injections of prostigmin 1:2000 one cc. These treatments were repeated on March 6th and 13th. At this time the patient was feeling much better and his hearing was greatly improved. He was seen again on April 20th, but no treatment was given as recovery was complete. On May 22nd he was seen again; he had caught cold and his hearing was worse. He was politzerized and injected with prostigmin. On June 22nd his hearing was one hundred percent and there were no noises. He has not been seen since.

Case 18.— A. H., female, aged twenty-two. The patient was first seen on July 14, 1941, when she complained of dullness of hearing in the right ear. Examination revealed suppurative chronic otitis media which was treated successfully. There was no change in hearing in seven weeks. Treatments were started on Sept. 25th, using politzerization and prostigmin 1:2000 one cc. On Oct. 8th the patient was treated again and reported alternaitng improvement and regression in hearing. On

Oct. 15th, she was treated again as before; hearing better. On Oct. 20th she was treated again; hearing one hundred percent. She has not been seen since.

Case 19.— J. H., female, aged forty. The patient was first seen on Feb. 5, 1941, when she complained of pain in the right ear and partial deafness in both ears. Examination revealed a chronic otitis media which responded to treatment but deafness persisted. She was given her first dose of prostigmin by injection on Feb. 20th and injections were repeated weekly for three injections. The patient was last seen Mar. 6th; her hearing was definitely improved. This deafness was attributed to necrosis.

Case 20.—H. M., female, aged twenty-three years. The patient was first seen on Mar. 17, 1942. She complained of tinnitus in both ears, and upon examination it was found that she was suffering from nerve deafness in the left ear and bone conduction deafness in the right ear. This patient was first treated by another physician with thiamin and other routine therapy with no results.

Treatment with prostigmin was started on March 24th and repeated on March 31st and April 7th. One week later hearing was definitely improved in the right ear. Tinnitus disappeared after the second injection.

Case 21.—R. J., female, aged twenty-five years. The patient was first seen in April 1940, when examination revealed seventy-five percent hearing in both ears, attributed to a tubal catarrh. She was politzerized and injected with prostigmin. Four injections were given the first week, Sept. 5th, 9th, 11th, and 13th, then one a month through April 17, 1941. This deafness was completely cleared up. Eleven injections were used altogether.

Case 22.—T. K., female, aged sixty-seven years, first seen on Feb. 1, 1943. She complained of deafness in the left ear, and on examination was found to have a tubal catarrh and high blood pressure which was successfully treated with sodium nitrite. She was injected with prostigmin on Feb. 1st and politzerized. Injections and politzerization were repeated on February 15th, March 11th and 18th, and April 1st. The patient has shown definite improvement to date.

Case 23.—Mrs. J. M., aged sixty-two years. She was first seen on May 22, 1942, when she complained of complete deafness and tinnitus. She was injected with prostigmin and politzerized on May 22nd, and 29th, June 4th, 12th, and 26th, and July 10th. Deafness was definitely improved and tinnitus better. She was not seen again until Sept. 23rd, when tinnitus had returned. Injections of prostigmin were given. When seen on Nov. 16th, tinnitus had gone and hearing much improved. She was given injections of prostigmin on Nov. 23rd and Dec. 2d. There was still some deafness but tinnitus was completely gone.

Case 24.—Mrs. D. M., aged twenty-two years. The patient had been treated in 1940 for tubal catarrh by six weekly injections of prostigmin and politzerization. The deafness and tinnitus were completely relieved, and the patient did not return until Feb. 24, 1941, when examination revealed that the ears were back again in the same condition—almost complete deafness. Treatment was again started, with prostigmin injections and politzerization on Feb. 24th and 27th, March 13th and 27th, April 13th, and May 1st. Her hearing completely cleared again. This patient was formerly treated without prostigmin, with no results. On Feb. 24, 1943, she was seen again, when her ears were found again in the same condition. She will get prostigmin treatment again as soon as she can get time for treatment.

Case 25.—L. M., female, aged forty-six. She was first seen in Jan. 1937, when deafness from tubal catarrh was found. She was treated without prostigmin to April 1937. She showed some slight improvement but regressed whenever she caught cold, up to 1943. The patient had no prostigmin during this interval. She was seen on Feb. 24, 1943, and was found to be completely deaf. She was politzerized and given injections of prostigmin, and on Mar. 8th the treatment was repeated, when some improvement in her hearing was noted. She was treated again on Mar. 29th and her hearing was found normal.

Case 26.—E. M., female, school teacher, aged about thirty-three years. She was first seen on Sept. 9, 1940, when she complained of deafness in the left ear and tinnitus, which was diagnosed as nerve deafness. Treatment was started with thiamin, 3 mgm. three times a day, and injections of prostigmin on Sept. 9th, 16th, 24th, Oct. 7th, 14th, and 21st. On the last date hearing was examined and found to be about the same as when treatment was started. No injections were given then until two weeks later when she was examined again and her hearing found to be somewhat better. Injections were given again on Nov. 4th, 18th, 25th, Dec. 14th; hearing on the last date was about seventy-five percent, where it had been fifty percent in the beginning. Air conduction was definitely better. She received eleven injections in all. The patient has not been seen since. Tinnitus was relieved early.

Case 27.—Mrs. H. M., aged forty-two, was first seen on Nov. 25, 1939, when her left ear was politzerized for tubal catarrh and deafness. Her hearing was spotty. No prostigmin was given. She was not seen again until Mar. 16, 1940, when chronic tubal catarrh, with associated deafness, was found. I gave one injection of prostigmin, and did not see her again until Nov. 20th. Her hearing had improved with the one injection and had remained improved during this period, but on Nov. 20th she complained of deafness in both ears, which was found to be due to tubal catarrh. I gave the patient one injection of prostigmin, and politzerized both ears. She has not been seen since.

Case 28.—J. M., male, aged fifty-nine years, was first seen Sept. 11, 1940, when he complained of deafness and dizziness. Examination revealed no air conduction and poor bone conduction, a positive Romberg, and chronic suppurative discharge from the right ear. Started treatment with three mgm. thiamin, three times a day. I cleansed the ear, politzerized, and injected prostigmin. The patient was seen again and the treatment repeated. Dizziness was gone, and there was less tinnitus. He was treated again on Oct. 23d. There was no dizziness, and the tinnitus was almost gone. I injected prostigmin and cauterized with silver nitrate. I injected again on Oct. 30th, and again on Nov. 10th. The patient was in good condition, but still deaf.

Case 29.—G. R., male, age not known. He was first seen on Feb. 24, 1941, when he complained of deafness with tinnitus which was found to be due to tubal catarrh. He was politizerized and injected with pro-

stigmin. On March 3rd he was seen and treated again but without improvement. On March 17th he was feeling better, tinnitus had improved, and the deafness was almost completely gone. He was seen for the last time on March 24th and the tinnitus and deafness were both completely cleared.

CASE 30.— Mrs. E. R., aged forty-two, first seen Sept. 13, 1940. The patient complained of tinnitus of ten years' duration. She was deaf to low tones but heard high tones fairly well, about twenty-five percent of the spoken voice. The right ear drum was perforated. Injections of prostigmin were given Sept. 13th, 17th, 19th, and 23rd; tinnitus was still present. Another injection was given on Sept. 26th and the tinnitus disappeared. She was politzerized and injected again on Sept. 30th. Her hearing was definitely improved and the tinnitus cleared up. The patient was discharged and has not been seen since.

CASE 31.—Mrs. G. S., aged twenty-seven, first seen Sept. 13, 1941. The patient complained of dullness of hearing in both ears of two years' duration, which was found to be tubal catarrh deafness with some nerve deafness in the right ear. On Sept. 20th I prescribed thiamin, three mgm. three times a day, and a nasal douche, and injected prostigmin; no change was noted. I repeated the treatment but stopped the thiamin. On Oct. 4th the patient was politzerized and injections of prostigmin given, and she heard better. On Oct. 11th no further change was noted and she was treated again. On Oct. 18th her hearing was normal and she was injected and discharged. The patient has been seen from time to time since for other complaints, but her hearing remains good.

Comment

In preparing this report it was at first intended that the case records be presented in chart form. It was soon found, however, that the nature of the records would not render them sufficiently informative in this medium and, therefore, they are presented in the form of condensed case histories. With the possible exception of Cases 9, 10, 14, 18, and 28, it will be seen that response to prostigmin was excellent. Even Case 28 cannot be considered a complete failure in view of the fact that the tinnitus definitely improved. The degree of improvement in deafness was not checked by audiometer in any case, but the usual office hearing tests were carefully carried out. In evaluating the results of prostigmin in these cases, the consideration obviously arises that some of these patients might have improved or been cured under ordinary treatment for deafness; others might even have recovered spontaneously. The fact that adjuvant treatment was used also adds to the difficulty in determining the influence of prostigmin. However, in this series it seemed that these prostigmin-treated patients improved more rapidly than if other treatment been used alone. In some cases prostigmin was the only treatment given and it seems likely that improvement in these was due to the drug. This is particularly true of those cases of long standing which had failed to respond to any previous treatment. It is reasonable to conjecture, also, that the fairly recent and uncomplicated cases in which prostigmin was used might otherwise have progressed into much more serious aural pathology.

Summary and Conclusion

1. Thirty-one new case records are added to the literature on the prostigmin treatment of deafness and tinnitus.

2. The action of prostigmin in benefiting twenty-six of these patients is discussed.

3. Prostigmin merits trial in the majority of cases of deafness and tinnitus.

References

1. DAVIES, T. C., and ROMMEL, J. C.: Treatment of deafness and contiguous nerve disorders with prostigmin. *Clin. Med. and Surg.* 46:329 (Aug.) 1939.
2. TATERKA, H. D.: Preliminary study of effect of prostigmin on tinnitus. *Laryngoscope* 52:299 (April) 1942.
3. JUDGE, A. F.: Prostigmin in the treatment of chronic deafness and tinnitus aurium. *Mil. Surgeon* 90:177 (Feb.) 1942.
4. ALEXANDER, L. W.: Use of prostigmin methylsulfate in deafness: preliminary report. *New Orleans Med. and Surg. Jour.* 93:474 (March) 1941.
5. ROSENTHAL, M.: Use of prostigmin for impaired hearing. *Arch. Otolaryngol.* 34:540 (Sept.) 1941.
6. HOUSER, K. M.; CAMPBELL, E. H., and SCHLUEDERBERG, H.: Treatment of chronic deafness and tinnitus with prostigmin. *J.A.M.A.* 115:994 (Sept.) 1940.

437 MAIN STREET

THE TREATMENT OF SOME OF THE TOXIC SYMPTOMS FOLLOWING SULFONAMIDE THERAPY

LUKE MAGLIARO

Boston, Mass.

Patients who are treated with sulfonamide drugs have more or less similar acute toxic reactions. Some of the common toxic reactions are nausea, vomiting, headache, vertigo or dizziness, mental depression, malaise, tinnitus, pains, numbness, and neuritis. These clear up with the administration of dicalcium phosphate, in the form of dulcet-bars, four to six a day. These are allowed to dissolve in the mouth, and the symptoms are relieved from one to four days to two weeks, depending upon their severity. A feeling of soreness is present, but the patient is able to be up and, in fact, working during this time.

The pains, which are so severe in some cases as to cause the patient to be in bed, are located over the spleen, liver, stomach, and front of the chest, and clear up almost immediately on giving two dulcet-bars one after another. The patient then states that he feels only a sensation of soreness over the affected parts, and is able to get up and walk about. He feels well on the second and third days with dicalcium phosphate administration, except for the soreness, which does not interfere with his daily functions. These pains simulate acute abdominal and chest conditions, and a differential diagnosis can be made by the administration of a sulfa drug and by giving dicalcium phosphate. The latter drug relieves the pain and leaves the patient with a sensation of soreness over the affected parts. Of course the two conditions may be present at the same

time, and the physician will be aided in making a diagnosis by the use of proper methods and by treatment. Dicalcium phosphate, which will aid the physician in making a diagnosis, will thus become a part of his armamentarium.

It has also been noticed that cal-c-tose, three to four tablespoonfuls in half a glass of water, resulted in some improvement in the pains, headaches, dizziness, tinnitus and nausea.

When these toxic reactions occurred, the dosage of the sulfonamide drug was reduced one-half and dicalcium phosphate was given with it, six dulcet-bars a day. In fourteen of these cases, all the patients obtained relief from their toxic symptoms, and none of the toxic reactions appeared during the rest of the combined treatment. The maximum dosage was continued in eight cases in which the patients were given sulfonamide treatment and all presented toxic reactions. Dicalcium phosphate was given, eight dulcet-bars a day. Six patients stated they were relieved of their toxic symptoms, while two complained of soreness over the spleen and the left side of the front of the chest involving the ribs, sternum and muscular parts. The sulfonamide treatment was continued to the end in conjunction with dicalcium phosphate.

Conclusion

The disadvantage of treatment with sulfonamide drugs, resulting from toxic reactions, is overcome by giving dicalcium phosphate in the form of dulcet-bars, either plain or chocolate flavored. The sulfa drugs can now be given with dicalcium phosphate, throughout the whole course of an illness unless other toxic reactions occur. Patients can be gainfully employed while under sulfonamide and dicalcium phosphate treatment. Dicalcium phosphate can be used to differentiate symptoms caused by acute abdominal and chest conditions and pains due to sulfonamide drugs.

883 HUNTINGTON AVENUE

QUICK ENERGY VALUE OF HEXOSE (DEXTROSE-LEVULOSE) IN GRAPE JUICE*

As Measured by a Series of Bicycle Ergometer Tests

FREDERIC DAMRAU, EDGAR A. FERGUSON, JR., and MILTON A. LESSER
New York, N. Y.

Although it is generally recognized that dextrose and levulose are sources of quickly available energy, direct measurement of such energy release appears to have received but little attention. However, that such values can be determined with a high degree of accuracy has been established by the tests herein reported.

In this work, using exclusively a brand[1] of grape juice known to contain seventeen percent hexose (balanced dextrose and levulose) and employing a modification of the Atwater-Benedict (1) bicycle ergometer for making the determinations, it was found that these natural sugars are quickly utilized and afford an appreciable energy lift. A similar apparatus has recently been employed by King and his associates (2) to study the work capacity of a group of highly trained athletes. In our investigations, however, it was felt that a cross-section of a typical population group would give more indicative and practical results. In other words, our purpose was to determine the quick energy value of dextrose and levulose in the form of grape juice as used by the general population rather than by highly trained athletes.

It is well known that carbohydrates in general provide the cheapest, most easily digested and most quickly available forms of body fuel. Of these, sugars offer in a concentrated form the most readily available carbohydrate (Nixon, 3). However, all digestible carbohydrates must be converted to dextrose or a similar hexose before they can be transported via the blood for use by the tissues. Indeed, dextrose has aptly been called "the normal sugar of the blood" (Council on Foods and Nutrition, 4). As the main source of body energy, dextrose is utilized by the organism in preference to other fuels, including fats and proteins (Martin, 5). Hence the ingestion of dextrose and levulose as such offers certain decided advantages with regard to physiological economy and more rapid utilization. Obviously, when dextrose and levulose are taken, they are absorbed from the alimentary tract, mainly in the small intestine without requiring previous digestion. However, these hexoses must be in solution, as in grape juice, before they can be absorbed and used.

Although the constancy of the absorption rate from the intestine is still a moot question, Cori and Cori (6) have estimated that 0.8—0.85 Gm. of dextrose per kilo of body weight is absorbed per hour. Numerous investigations, especially those based upon blood sugar determinations, have led to the conclusion that dextrose is absorbed rapidly from the intestinal tract (Council on Foods and Nutrition, 4).

This fact forms the successful basis for the now widely used Exton-Rose dextrose tolerance test. As pointed out by Matthews and his associates (7) of the Mayo Clinic, earlier workers had obtained disappointing results when such slowly absorbed carbohydrates as bread, crackers and oatmeal gruel were used as the test materials. It was not until dextrose was employed that this type of test began to be of real diagnostic value. From the viewpoint of rapid dextrose utilization, it is significant that the experience of Matthews et al led them to select the one hour value of the blood sugar as the most effective means of differentiating diabetic and non-diabetic persons.

Practical application of this characteristic of dextrose is evidenced not only in diagnosis but in the fields of therapy and dietetics as well. The wide use of dextrose solutions parenterally is so well known as hardly to require comment. The rapid efficacy of dextrose to combat hypoglycemia and insulin shock offers another example of its speedy utilization.

*These studies were made possible by a research grant from The Welch Grape Juice Company, Westfield, N. Y.

[1]Welch's grape juice was used exclusively in these studies.

Not so well appreciated, however, is the value of dextrose to prevent or relieve fatigue resulting from exhausting work or other activities. Several years ago, Levine and his coworkers (8, 9) studied the blood sugar levels of marathon runners and found that the ingestion of dextrose resulted in better performance and improved physical condition.

More recently, in a discussion of industrial fatigue, Dill (10) observed that there are many possible emergencies requiring a rate of energy exchange so great that ordinary food might fail to digest but in which dextrose might be fully absorbed. Of pertinent significance in this connection is the inclusion of dextrose tablets (socalled "pep pills") in the carefully prepared and tested army field rations, especially the now famous "K" ration (Sonnedecker, 11).

Since grape juice is one of the richest natural sources of dextrose and levulose, it lends itself particularly well to quick energy determinations. The brand of grape juice which was used exclusively in these studies was selected because of its careful laboratory controlled uniformity and purity. As a source of dextrose it surpasses other commonly used fruit juices. Thus this brand has a uniform hexose content of seventeen percent (dextrose balanced with levulose), as compared with the following total carbohydrate contents: California orange juice, 13.1 percent; Florida orange juice, 9.4 percent; grapefruit juice (unsweetened), 8.5 percent; pineapple juice, 12.8 percent and prune juice (canned) 13 percent (Bridges and Mattice, 12).

Moreover, when provided in grape juice, the dextrose and levulose are in solution for quickest assimilation and in association with the normal minerals, vitamins and other food accessories present in the natural product. Particularly important is the normal vitamin B_1 content of the juice. Indeed, one cannot discuss the subject of carbohydrates without some consideration of the important rôle played by this vitamin in their utilization.

The interrelationship has recently been brought into sharp focus by the *Council on Foods and Nutrition* (13). That thiamine is intimately concerned with carbohydrate metabolism and that it is an essential for the conversion of these foods into energy has long been recognized (Cowgill, 14; Rosenberg, 15). However, it is only recently that any degree of accord as to actual required ratios has been reached. According to a recent editorial (16), in which the latest work on the subject was considered, the recommended daily intake is approximately five hundred micrograms of thiamine per thousand calories.

It is noteworthy, therefore, that the vitamin B_1 content of the brand of grape juice used is almost exactly in correct proportion to the calories supplied. Thus, this brand of grape juice has a caloric value slightly above three hundred calories per pint and a thiamine value of one hundred fifty micrograms (fifty U.S.P. units of vitamin B_1). It is our opinion that the correct balance of calories and thiamine enters prominently into the impressive results obtained in this series of bicycle ergometer tests.

The purpose of this investigation was to determine the effect of dextrose and levulose in the form of grape juice on the work output and endurance of a group of cooperative individuals. This was done by means of the bicycle ergometer test, with which the work output of the individual was transformed into electrical energy and calculated in watts per second and watt minutes. The bicycle ergometer employed was a modification of the original used by Atwater and Benedict (1). It consists of a stationary bicycle to which is attached a dynamo with a belted drive. Connected to the dynamo is a load resistance.

The energy produced by the rider can therefore be measured on a meter and timed. Preliminary experiments had demonstrated that a standard speed, producing 47.93 watts per second, was most suitable for the average person. Higher speed rates could be maintained only by trained athletes. The watts per second and watt minutes or total energy output of the rider were calculated from the time period the rider was able

Table 1: Comparison of Work Output in Terms of Watt Minutes

CASE NUMBER	CONTROL	WITH GRAPE JUICE	DIFFERENCE WITH GRAPE JUICE	PERCENTAGE DIFFERENCE
1	79 88	99.85	+ 19.97	+ 25.00
2	59.91	82 28	+ 22.37	+ 37.33
3	79.88	75.89	— 3.99	— 5.00
4	67.90	99.85	+ 31.95	+ 47.06
5	151 77	143.79	— 7.98	— 5.26
6	43.93	77.48	+ 33.55	+ 76.36
7	22 37	31.95	+ 9.58	+ 42.86
8	59.11	39 94	— 19.17	— 32.43
9	347.49	383.44	+ 35.95	+ 10 34
10	46.33	65.50	+ 19.17	+ 41.38
11	51.92	59 91	+ 7.99	+ 15.38
12	87.87	111.83	+ 23 96	+ 27.27
13	79.88	79.88	+ - 0.0	+ - 0.0
14	55.92	79.88	+ 23.96	+ 42 86
15	111.83	187.73	+ 75.90	+ 67.86
16	49.53	79.88	+ 30.35	+ 61 29
17	47.13	55 12	+ 7.99	+ 16.95
18	111.83	151.77	+ 39.94	+ 35.71
19	718.95	958 60	+ 239.65	+ 33.33
20	335.51	367.46	+ 31.95	+ 9 52
21	244.44	316.34	+ 71.90	+ 29.41
22	323 53	351.49	+ 27.96	+ 8.64
23	532.02	575.16	+ 43.14	+ 8.11
24	559.18	718.95	+ 159 77	+ 28.57
25	246.04	311.55	+ 65.51	+ 26.62
26	431.37	444.15	+ 12.78	+ 2 96
27	79.88	99 85	+ 19.97	+ 25.00
28	79.88	87.87	+ 7.99	+ 10 00
29	63.90	87.87	+ 23.97	+ 37.50
30	495.28	623.09	+ 127.81	+ 25.81
31	532.02	747.71	+ 215.69	+ 40.54
32	479 30	575.16	+ 95.86	+ 20.00
33	159.77	287.58	+ 127.81	+ 80.00
34	159.77	207.70	+ 47.93	+ 30.00
35	99.85	127.81	+ 27.96	+ 28 00
36	55.12	61.51	+ 6.39	+ 11 59
37	54.32	49.53	— 4.79	— 8 82
38	63.90	86.27	+ 22.37	+ 35 00
39	559.18	718.95	+ 159.77	+ 28.57
40	23.96	29.56	+ 5 60	+ 23.33
41	79.88	119.83	+ 39.95	+ 50.00
42	199.71	279.59	+ 79 88	+ 40.00
43	23.96	35.95	+ 11.99	+ 50.00
44	71.89	98.26	+ 26.37	+ 36.67
45	34.35	38.34	+ 3.99	+ 11.63
46	31.15	38.34	+ 7.19	+ 23.08
47	747.71	790.85	+ 43.14	+ 5.77
48	35.95	43.94	+ 7.99	+ 22.22
49	71.89	86.27	+ 14 38	+ 20 00
50	75 89	103.85	+ 27.96	+ 36.84
51	1006.53	1035.29	+ 28.76	+ 2.86
52	445.75	661.43	+ 215.68	+ 48.39
53	107.84	111.83	+ 3.99	+ 3.70
AVERAGE	203.47	248 75	+ 45.28	
AVERAGE PERCENTAGE OF INCREASE WITH GRAPE JUICE				26.22

to pedal and maintain the established standard speed.

A group of fifty-three cooperative individuals (fifty-two men and one woman), representative of a typical cross-section of a city population, was used in this series of experiments. All subjects who failed to comply with all the requirements of the tests were excluded from consideration. Lack of cooperation and failure to maintain the required speed explain why only one woman, a housewife (Case No. 40), was included in the test group. We soon learned that women generally are either unable or unwilling to perform the very strenuous physical exertion required by the test. Ages ranged from thirteen to fifty years and averaged 28.27 years.

248.75 watt minutes as compared with 203.47 watt minutes for the control performances of the same subject. Hence the fifty-three subjects averaged an increased work output of 45.28 watt minutes with the use of grape juice as compared with their control performance without it.

Further calculation of the work output shows an average increase of 26.22 percent one-half hour after consumption of an average of 280 cc. or nine and one-third fluid ounces of the grape juice, as compared with control tests in the same individuals. It is noteworthy that of this entire group of fifty-three persons, forty-eight (ninety percent) showed an increased work output after ingestion of grape juice, this effect being

Table 2: Comparison of Pulse Rate, Respiratory Rate and Percentage Recovery Rate

Average of	PULSE RATE				RESPIRATORY RATE				No. Seconds Exercise Maintained
	Before Test	After Test	After Two Minutes	Percentage Recovery	Before Test	After Test	After Two Minutes	Percentage Recovery	
Controls	84.8	149.1	104.1	71.5	18.3	31.3	22.5	68.0	254.7
After Grape Juice	85.5	147.6	104.4	71.1	18.4	30.4	22.1	67.9	311.4

In performing the test, the subject mounted the bicycle and pedaled at a fixed rate of speed until completely exhausted and unable to continue. The period of time that this standard speed could be maintained was recorded as the basis for calculating individual performance. Each subject was allowed a trial period to permit him to become familiar with the apparatus and minimize practice effect. Subsequently he made two comparative test performances, one serving as a control. In order to balance as far as possible the effect of additional practice and to give results applicable to a typical population group, the subjects were divided into two groups: some received the grape juice in the first test and others in the second. Two days were allowed between trials, except in cases No. 6 and No. 16. In these instances a four-week interval elapsed between tests.

Each subject was instructed to fast prior to the tests. The average fasting time was approximately eight hours. Pure, undiluted grape juice was given one-half hour before the test, the subject drinking as much as could be ingested up to one pint. This amount was measured. The average quantity of grape juice consumed per person was 280 cc. or nine and one-third fluid ounces. No food or other substance was given prior to the control tests. Pulse and respiratory rates were determined immediately before, immediately following, and again two minutes after each test period. The percentage recovery from the acceleration of pulse and respiration was recorded in each case.

In Table 1 are summarized the results obtained in this series of tests. Here is shown a comparison of work output, expressed in terms of watt minutes, under control conditions and one-half hour after the ingestion of grape juice.

From these data it is apparent that the theoretical value of the seventeen percent dextrose and levulose in grape juice for quick energy is fully corroborated by actual performance tests. Measured in the form of electrical energy by means of the bicycle ergometer, the average work output with the use of grape juice was

manifest after the comparatively short time interval of thirty minutes.

Of definite significance was the finding that, although the subjects did an average of 26.22 percent more work when they took the grape juice, the percentage recovery of pulse and respiratory rates toward normal showed no difference as compared with the control observations. This is evident from the summation given in Table 2. Since all conditions and physiological factors were comparable, it follows that the extra energy output observed was derived solely from the grape juice.

Another observation that is worth considering at this time is concerned with the work output ability of the different age groups. In making our calculations we were impressed by the fact that there appeared to be a definite falling off of work output and endurance in the higher age brackets. Broken down into decades on the basis of the control tests, it was found that subjects in the second decade of life had an average work output of 361.69 minutes. Under the same conditions, persons in the third decade produced a slightly higher average work output of 371.38 watt minutes. However, in the fourth and fifth decades the work output was definitely lower. The average of those in the fourth decade was 97.66 watt minutes, while those in the fifth decade produced an average of only 47.13 watt minutes under identical control conditions.

This abrupt decrease in work output and endurance with advancing years is entirely consistent with our general knowledge concerning physical activity and capacity at different age levels. The results obtained with individuals in the second and third decades, while high, occasioned no great surprise. They are consistent with the demand for men in these age groups for both military and industrial needs. The greatest resistance to fatigue of subjects at all ages, when supplied with readily utilized dextrose and levulose, is also readily explained.

From the foregoing studies it may be concluded that the brand of grape juice under investigation is a source of quick food energy which definitely increases the

(*Concluded on page* 619)

Editorials

Salerno

Salerno, with the landing of the American Fifth Army on its hotly defended beaches, has become a place known to every thinking man in the world. This ancient Roman town and seaport, beautifully situated on the coast of the Mediterranean, was, strangely enough, the home of the first European Christian School of Medicine, the world famous School of Salerno. Salernitan physicians have been mentioned as early as the middle of the ninth century. In the eleventh and twelfth centuries, this medical school reached its height. When the Crusades began, the Medical School of Salerno was the only place in Europe where any scientific medical education could be obtained. It was called "Civitas Hippocratica".

Salerno was a safe harbor for the Crusaders when they went to their campaigns in the East as well when they returned. They not only brought their wounded back, but also people who had been subjected to typical Oriental diseases, such as leprosy, cholera, plague and malaria. The Bendictine monks of the nearby monastery Monte Cassino, played an important rôle in the establishment of the medical school, and one of their scientists, Constantine of Africa, through his excellent translations of Arabic medical works, became the greatest figure in the medical school of Salerno. Nobody can tell whether the celebrated didactic poem, *Regimen Sanitatis Salernitanum*, had its origin really in Salerno. Possibly Arnold of Villanova, who had studied at Salerno, had compiled some three hundred and sixty medical rhymes which came from Salerno and other parts of Italy, and from France. In the following centuries these were expanded to over three thousand five hundred rhymes, by additions and interpolations by various authors, and passed through two hundred and forty separate editions in different languages.

According to ordinances issued by Roger II of Sicily and by Emperor Frederick II, no doctors were allowed to practice medicine in their realm unless they had received the approbation of the physicians of Salerno. But when, in 1924, the university of Naples was founded by Frederick II, the importance of Salerno soon began to wane. It gradually became a place of "bogus degrees" and was finally closed by Napoleon in 1811. The use of dissections in Salerno was an important aid to the progress of surgery.

The School of Salerno may have been no source of great original medical discoveries, but it was an important and even indispensable link between ancient and modern medicine, and for a long time the most efficient place of instruction for numerous generations of physicians in medieval Europe.

Industrial Accidents and War

On July 23, 1943, the War and Navy Departments made public American casualty lists for the first one and a half years of this war. During this time 16,566 members of the armed forces had died in action or from wounds, as compared with 53,407 in the one and a half years of war, 1917-18.

About the same time *Accident Facts for* 1943 was issued by the National Safety Council. This publication recorded 93,000 accidental deaths and 9,200,000 non-fatal injuries, costing $5,200,000,000 among civilians in the United States during 1942. Make your own comparisons. The record was a little better than that for 1941 during which year there were 102,500 accidental deaths.

In 1942 some thirty thousand persons were killed by accidents in their homes, 28,200 by motor vehicles, 18,500 while at their occupations, and 14,000 died as a result of public accidents not concerned with motor vehicles. There were 18,000 fatal accidents to farm residents, of which 7,500 occurred in homes and 4,400 as a result of farm work.

The commonest cause of farm deaths were falls and machinery. A lesser cause was encounters with livestock. Agriculture as an occupation supplied twenty-four percent of all occupational deaths. Construction accounted for seventeen percent, as did manufacturing also; nineteen percent occurred in trade and service occupations; thirteen percent in transportation industries and public utilities, and only the remainder in mining, quarrying and oil and gas wells.

Accidents cost industry six hundred million, though they cost the nation at large several times that.

Only heart disease, cancer, cerebral hemorrhage, and nephritis kill more people than accidents.

It seems that battlefields, naval engagements, and bombing expeditions by plane should hold few terrors for a people so tempered as we are.

Health in American Army Camps

The health record of our soldiers in the United States has continued to be generally satisfactory although in recent months a moderate increase over previous figures has been recorded in both sickness and death rates. We see from a study of the Metropolitan Life Insurance Company that, thus far, in 1943 the disease record is distinctly better than two years ago when, because of the widespread prevalence of influenza, admissions during the early part of the year averaged about 1,350 per one thousand per annum, while in the first five months of 1943 the admission rate for disease has averaged about 840 per one thousand per annum.

The most notable feature of the disease situation in the Army has been the prevalence of "atypical" pneumonia. While thousands of such cases have occurred

among soldiers the disease has generally been mild in character, and the mortality rate low. This is especially remarkable because the sulfa drugs, which have been so successful in the treatment of pneumococcus pneumonias, are practically useless in atypical cases. During the past year there have been sizable numbers of cases of scarlet fever, measles and mumps, and in some places outbreaks approaching epidemic proportions have occurred. There has been a marked increase in the prevalence of cerebrospinal meningitis in recent months, but the incidence rate of the disease at the peak was below the peak rates of 1917-18. Thanks to sulfa drug therapy, the fatality rate from this disease has been extremely low. During the first world war, more than one-third of the cases were fatal. Venereal disease still constitutes a major health problem for the Army. Men afflicted with these diseases are being inducted into the Army in increasing numbers; the Army is fully aware of the seriousness of the problem.

A favorable feature of the Army health picture is the sharp decline, over the past year or more, in the incidence of and mortality from accidental injuries. This may seem surprising in view of the enormous expansion of our air training program, with its great accident risk to cadet pilots, the high degree of mechanization of the Army, and the intensification of maneuvers during training, with their closer simulation of actual battle conditions. In large part, the decline reflects the lesser degree of exposure to accidents among the technical forces in training. The improvement is also due, to some extent, to the Army's effective safety campaign. In fact, the Army has been successful in reducing substantially the flying accident rate even among pilots in training. The country may well be proud of these achievements.

Treatment of Human Diabetes

Himsworth (*Brit. Med. Jour.* 2:137, 188, 1936) recommends the following rules for the treatment of diabetes in general practice. First eliminate and keep absent all traces of ketonuria; second, remove or reduce glycosuria to the smallest proportions. It should be realized that ketonuria is a more dangerous symptom by far than glycosuria, as a patient who has ketonuria may pass into coma with little warning. When a patient is discovered to have diabetes, the doctor must decide whether or not to start insulin treatment at once. A good rule is to be guided by the ferric chloride or a reliable test for ketonuria. If this test is positive, insulin must be given at once; if negative, insulin should not be given at once and the doctor must investigate the patient's reaction.

As a rule a patient's minimum requirement of food in calories can be judged approximately by his general appearance. An active man can usually manage with 2,300 calories a day; a sedentary man with 2,000 calories a day; most women with 1,750, and some individuals with 1,500 calories a day. By the way, a diet of 2,000 calories contains 200 gm. carbohydrate, 100 gm. protein and 100 gm. fat. However, the personal equation must be always considered and dieting is not so strict with diabetics as formerly; or course, it is important that the patient's body weight should be kept at a steady level. No attempt should be made to keep the urine entirely sugar free as exercise in that case would bring on hypoglycemia. The dosage of insulin should be regulated by the doctor, as each individual is to a certain extent a law unto himself. If a diabetic has an intercurrent illness, the urine should be kept free from acetone and the infection must be treated as quickly as possible; sometimes, perhaps, carbohydrate and more insulin are required. When there is an excess of acetone bodies in the blood, diabetic coma results, accompanied by severe dehydration. This condition must be dealt with promptly.

Sweating Sickness in the Middle Ages

The earliest medical history of consequence was the *Gesshichte der Heilkunde*, of J. E. K. Hecker (1795-1850), which was followed by his collective monograph on the great epidemics of the Middle Ages, which was well translated by Dr. Benjamin Guy Babington, a doctor and epidemiologist and a wonderful linguist and oriental scholar.

Sweating sickness, probably a modality of influenza, was described by Hecker. He described the disease as a violent inflammatory fever which after a short rigor prostrated the powers as with a blow and amidst painful oppression at the tsomach, headache and lethargic stupor suffused the whole body with a fetid perspiration. All this took place in a few hours and the crisis was always over in the space of a day or a night.

Many epidemics of this nature, accompanied by a group of various epidemic diseases, swept over Europe at intervals, decimating the civil population and attacking especially the armies which were constantly fighting in one part of Europe or another.

The observer of the fifth sweating pestilence was John Kaye or Keys of Norwich, England, generally known under the Latinized version of his name, Caius. He was in Shrewsbury, England, during the sweating sickness epidemic. His pamphlet on the disease, now very rare, and the first and last published in England, did not appear before 1552. It is written in strong language; the writer did not mince words, as he blames without any reserve the gross mode of living of his countrymen. No doubt he was right in attributing the spread of this fell disease to the unspeakably filthy sanitary arrangements and the total lack of domestic and personal hygiene. The floors of English houses were covered with rushes which were seldom, if ever,

completely removed. One lot was heaped upon another until it was a mass of disgusting decaying material. Caius preached temperance and less sensual indulgence, but his preaching fell on deaf ears. The people required from him an infallible preservative and not a lecture on morality.

By the autumn of 1551 the sweating sickness had vanished from the earth, that is to say, in that particular form. It is manifest that the mode of living of the people had a great share in its origin and spread. However, if sweating sickness was a modality of influenza, and the late Dr. F. G. Crookshank believed that more than one of the pestilences which wrought havoc in bygone days were forms of influenza or connected more or less intimately with that disease, then we are by no means free from such death dealing epidemics. It is their type which has changed largely in accordance with different modes of living.

News Items

Harvey Lecture.—The first in the 1943-1944 series of Harvey Lectures will be presented at the New York Academy of Medicine, Thursday evening, October 28th, by Dr. Harold G. Wolff, associate professor of medicine, Cornell University Medical College. His subject will be "Some Observations on Pain".

Medical Society of Virginia.—The annual meeting of the Virginia Medical Society will be held in Roanoke, October 25th, 26th, and 27th, under the presidency of Dr. J. M. Emmett, of Richmond.

Clinical Status of Penicillin.—At a stated meeting of the New York Academy of Medicine, held Thursday evening, October 7th, the program was devoted to a discussion of the status of penicillin from the clinical viewpoint. The paper of the evening was read by Dr. Chester S. Keefer, Wade professor of medicine, Boston University School of Medicine. A general discussion followed.

New England Roentgen Ray Society.—At a meeting of the New England Roentgen Ray Society, which was held in Boston on September 17th, the afternoon session was devoted to an x ray conference. It was followed by an address by Dr. M. C. Sosman on "Mediastinal Tumors and Aneurysms". At the evening session Dr. Marcy L. Sussman, radiologist at the Mt. Sinai Hospital, New York, presented a critical review of some aspects of cardiac roentgenology, which was discussed by Dr. George W. Holmes, Dr. M. C. Sosman, and Dr. Paul D. White.

Discussion on War Surgery.—At a meeting of the Section of Surgery of the New York Academy of Medicine, held Friday evening, October 1st, Colonel George R. Callender, Medical Corps, U.S.A., director of the Army Medical School, Washington, D. C., read a paper on the importance of missile velocity in the production of wounds. Major George K. Carpenter, Medical Corps, A.U.S., presented a report on battle casualties as seen at the Halloran General Hospital, and blast injuries in naval warfare was the subject of a paper presented by Commander Rupert H. Draeger, Medical Corps, U.S.N. There was a general discussion.

Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Livingston Seaman Fund for the furtherance of research in bacteriology and sanitary science. One thousand dollars is available for assignment in 1943. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman, and is administered by a Committee of the Academy under the following conditions and regulations: The Committee will receive applications either from institutions or individuals up to November 1, 1943. Communications should be addressed to Dr. Wilson G. Smillie, chairman of the Louis Livingston Seaman Fund, 1300 York Avenue, New York.

Goldwater Memorial Hospital Appointments.—The following appointments to the staff of the Goldwater Memorial Hospital have been announced: Dr. Ignaz W. Oljenick, associate visiting neurosurgeon; Dr. Henry P. Colmore, Dr. C. Dary Dunham, Dr. Emanuel Z. Epstein, Dr. Thomas H. Gleeson, Dr. Morton F. Mark, Dr. Theresa McGovern, Dr. Elliot A. Ornstein, Dr. Ralph A. Schneider, Dr. Frederick H. Shillito, Dr. Howard B. Shookhoff, Dr. Alfred Steiner, Dr. Cornelius Traeger, Dr. Herbert B. Wilcox, and Dr. Walter Redisch promoted to associate visiting physician: Dr. David Ulmar, visiting physician; Dr. F. Philip Lowenfish, dermatologist.

The Ledyard Fellowship.—The Society of the New York Hospital announced that application for the Lewis Cass Ledyard Jr. Fellowship must be received by the committee not later than December 15th to be available for the 1944-45 award. This fellowship was established in 1939 by Mrs. Ruth E. Ledyard in memory of her late husband, a governor of the New York Hospital. The income amounting to about four thousand dollars annually is awarded to an investigator in the fields of medicine and surgery or in any closely related field. Preference will be given to younger applicants who are "graduates in medicine and who have demonstrated fitness to carry on original research of high order". Applications for the fellowship should be addressed to the Committee of the Lewis Cass Ledyard Jr. Fellowship, the Society of the New York Hospital, 525 East Sixty-eighth Street, New York.

Fiftieth Anniversary of Tufts College Medical School.—The fiftieth anniversary of Tufts College Medical School, Boston, was celebrated by a series of appropriate seminars beginning September 15th and ending October 6th. On September 15th Major General James C. Magee, Surgeon General of the Army, delivered an address on "Military Medicine, with Special Reference to Tropical Diseases". On September 16th a meeting of the William Harvey Society was held with Dr. Timothy Leary as the principal speaker. His topic was "Excess Cholesterol as a Pathogenic Agent". On September 29th portraits were unveiled of Dr. Leary, professor of pathology emeritus, and Dr. Cadis Phipps, professor of medicine, at Tufts College Medical School. On September 22d Colonel Raymond W. Bliss was the guest speaker, and his subject was "Plans and Operations of the Surgeon General's Office". The ceremonies were brought to a close on October 6th with a general meeting at John Hancock Hall at which the principal speakers were Dr. Leonard Carmichael, president of the college, and Captain A. Warren Stearns, Medical Corps, U.S.N.R.

Personal.—Colonel Elliott C. Cutler, Medical Corps, chief surgical consultant in the European theater of operations, has been awarded an honorary fellowship in the Royal College of Surgeons. Colonel Cutler in civilian life was Moseley professor of surgery at Harvard University. He served overseas in the last war and won the Distinguished Service Medal.

Colonel Edgar Erskine Hume, Medical Corps, U. S. A., has been named chief American health officer of the Allied Military Government of Occupied Territory recently organized in Sicily.

Dr. Elmer L. Henderson, of Louisville, Ky., has been appointed special consultant to the Secretary of War in regard to surgical problems concerning the Army Air Forces.

Commander Don S. Knowlton, Medical Corps, U. S. N. R., has been awarded the Legion of Merit for noteworthy service on Guadalcanal Island.

Dr. Hugh T. Carmichael, formerly assistant professor of psychiatry at the University of Chicago, has announced the opening of his office in the Michigan Boulevard Building, 30 North Michigan Avenue, Chicago. He specializes in psychiatry and psychoanalysis.

Dr. J. Stanley Kenney, of New York, has been appointed chairman of the physicians group of the New York Committee of the National War Fund.

Dr. Thomas R. Brown, associate professor of medicine emeritus, Johns Hopkins University School of Medicine, Baltimore, has been awarded the 1943 Julius Friedenwald Medal by the American Gastroenterological Association.

Dr. Newton J. T. Bigelow, clinical director of the Utica State Hospital, Utica, N. Y., has been appointed superintendent of the Hudson River State Hospital, Poughkeepsie, and acting assistant commissioner of mental hygiene.

Captain Frank C. J. Jodosz, Medical Corps, A. U. S. has been awarded the Soldier's Medal for gallantry in action in Australia. Captain Jodosz's home is in Providence, R. I.

Lieutenant Henry R. Ringness, Medical Corps, U.S.N., was awarded the Navy Cross posthumously "for extraordinary heroism as flight surgeon of a Marine aircraft group during action against enemy Japanese forces on Guadalcanal in October 1942".

Dr. Ludolf N. Bollmeier, research associate at the Chicago Institute of Psychoanalysis, announces the reopening of his office, on October 5th, in the Thompson Building, Hot Springs National Park, Arkansas for the practice of psychoanalysis, psychiatry and psychosomatic medicine.

Dr. Claude W. Munger, medical director of St Luke's Hospital, New York, was named president-elect of the American College of Hospital Administrators at the recent meeting which was held concurrently with the annual meeting of the American Hospital Association.

Dr. Lyman W. Childs, health supervisor in the Cleveland Public Schools from 1910 to 1935, has been awarded the William A. Howell Medal for distinguished service in the field of school health. Dr. Childs retired in 1935 and is now living in Orlando, Fla.

Dr. Charles H. Danforth, professor of anatomy at the School of Medicine of Stanford University, has been appointed honorary librarian of the California Academy of Sciences.

Dr. Robert P. Fischelis, Trenton, N. J., formerly dean of the New Jersey College of Pharmacy has been awarded the Remington Medal for 1943, conferred annually by the New York Branch of the American Pharmaceutical Association. Dr. Fischelis is head of the chemicals, drugs and health supplies branch of the War Production Board.

Dr. Burton T. Simpson, director of the State Institute for the Study of Malignant Diseases, at Buffalo, N. Y., and widely known as an authority on cancer, retired August 1st, having reached the compulsory retirement age.

Dr. Tom A. Williams, formerly of Washington, D. C., is directing the City Clinic for Mental Hygiene in Asheville, N. C.

Dr. Florence R. Sabin, formerly of the Rockefeller Institute for Medical Research, has been made an honorary national commander of the Women's Field Army of the American Society for the Control of Cancer.

Dr. LeRoy M. Sutter, of Orlando, Fla., has been cited in orders of commendation for bravery under fire and for service beyond the call of duty in North Africa, it is reported. Prior to entering the Army in the spring of 1942, Dr. Sutter was on the staff of the Florida Sanitarium and Hospital in Orlando.

Dr. Eric Ogden, associate professor of physiology at the University of California, at Berkeley, has been appointed professor of physiology at the School of Medicine of the University of Texas, Galveston.

Dr. Stewart C. Thomson assistant professor of anatomy at the Loyola University School of Medicine, Chicago, has been appointed assistant dean of the medical school, succeeding Dr. John G. Powers who has retired to enter private practice.

Science Writers Plan Medical Publication.—A special publication committee has been appointed by the National Association of Science Writers to explore the possibilities of founding an official journal for the association to bring the advances of science and medicine to a wide layman audience, according to the *J.A.M.A.* Serving on the committee will be Robert D. Potter, New York, science editor of the *American Weekly*, William Laurence of the New York *Times*, Howard Blakeslee of the Associated Press, Waldemar Kaempffert of the New York *Times*, David Dietz, Scripps-Howard Newspapers, and Lawrence Salter of the American Medical Association.

Dental Hygienists for Army Dispensaries.—To supply the Army with needed dental hygienists, the U.S. Civil Service Commission has eliminated the experience requirement for such personnel. Many hygienists are in demand for Army hospitals and dispensaries throughout the country, particularly in the West and Southwest. Experience is no longer required for dental hygienist positions. Completion of a course in a recognized school of oral hygiene and registration as dental or oral hygienist is all that is necessary to qualify for the positions. There are no age limits; no written tests. Standard application forms must be filed with the United States Civil Service Commission. Washington, D.C.

Full information and application forms may be obtained at first and second class post offices, at Civil Service regional offices, and at the U.S. Civil Service Commission in Washington, D.C.

Quick Energy Value of Grape Juice

(*Continued from page 614*)

work output and endurance of subjects performing hard physical labor. This energy is available within half an hour or less after ingestion of the grape juice. It is our opinion that the balanced proportions of vitamin B_1 and carbohydrates (dextrose and levulose) present in this grape juice are important elements in this efficiency as well as in the avoidance of athiaminosis from excessive consumption of sugar without corresponding thiamine.

Summary

1. The reputed value of dextrose and levulose to provide a quick energy lift for increased work output has been confirmed by a series of bicycle ergometer tests, using a brand of grape juice known to contain seventeen percent of these hexoses.

2. Work output as measured by a series of bicycle ergometer tests in a group of fifty-three cooperative subjects was increased an average of 26.22 percent in one-half hour by an average of 280 cc. grape juice, as compared with control tests on the same subjects.

3. Although the subjects performed twenty-six percent more work when they took grape juice, the percentage recovery of pulse and respiratory rates toward normal showed no difference as compared with the control observations. Hence it is concluded that the grape juice was effective in increasing physical endurance as well as work output.

4. Since grape juice is properly balanced with respect to calories and vitamin B_1, its consumption by men and women performing hard physical labor offers an effective and wholesome means of obtaining a quick energy lift.

5. Comparing the different age levels, it was found that males in the second and third decades were able to perform three and three-fourths times as much work as those in the fourth decade and seven and four-fifths as much as those in the fifth decade.

References

1. Atwater, W. O., and Benedict, F. G.: *A Respiration Calorimeter*, Washington, Carnegie Institution, 1905. (Cited in Howell, W. H.: *Textbook of Physiology*, Ed. 13, Philadelphia, W. B. Saunders Co., 1936, pp. 1043-1044).
2. King, E. Q., McCaleb, L. B., Kennedy, H. F., and Klumpp, T. G.: Failure of aminoacetic acid to increase work capacity of human subjects. *J.A.M.A.* 118:594, 1942.
3. Nixon, J. A.: Address on food values and their practical application in dietetics. *Brit. M. J.* 1:1, 1934.
4. Council on Foods: Dextrose. *J.A.M.A.* 108:556, 1937.
5. Martin, E.: *Dextrose Therapy in Everyday Practice*. New York, P. B. Hoeber, Inc., 1937, pp. 33, 18-19.
6. Cori, C., and Cori, G.: Carbohydrate metabolism. *Ann. Rev. Biochem.* 3:151, 1934.
7. Matthews, M. W., Magath, T. B., Berkson, J., and Gage, R. P.: One hour—two dose dextrose tolerance test (Exton-Rose procedure); diagnostic significance. *J.A.M.A.* 113:1531, 1939.
8. Levine, S. A., Gordon, B., and Derick, C. L.: Some changes in the chemical constituents of the blood following a marathon race. *J.A.M.A.* 82:1778, 1924.
9. Gordon, B., Kohn, L. A., Levine, S. A., Matton, M., Scriver, W. de M., and Whiting, W. B.: Sugar content of the blood in runners following a marathon race. *J.A.M.A.* 85:508, 1925.
10. Dill, D. B.: Industrial fatigue and physiology of man at work. *Indust. Med.* 8:315, 1939.
11. Sonnedecker, G.: Fuel for fighters. *Science News Letter*, Sept. 5, 1942, p. 154.
12. Bridges, M. A., and Mattice, M. R.: *Food and Beverage Analysis*. Ed. 2, Philadelphia, Lea & Febiger, 1942.
13. Council on Foods and Nutrition: Some nutritional aspects of sugar, candy and carbonated beverages. *J.A.M.A.* 120:763, 1942.
14. Cowgill, G. R.: Need for addition of vitamin B_1 to staple American foods. *J.A.M.A.* 113:2146, 1939.
15. Rosenberg, H. R.: *Chemistry and Physiology of the Vitamins*. New York, Interscience Publishers, 1942, pp. 135, 143.
16. Editorial: Thiamin requirement of man. *J.A.M.A.* 121:53, 1943.

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Pseudo-Encephalitic Lesions Produced by Choline Injections

(*Continued from page 602*)

Although the liberation of neurohumors from the brain is still uncertain and the rôle of chemical mediators in central conduction is far from established, a Russian author, Rickl, has reported (6) the presence of acetylcholine or locus-specific neurohumors in the effluent blood from medulla and brain, and McMeekin has reported that cerebral embolus causes the liberation of a histamine-like substance from the brain (7).

More recently other authors, among them two Japanese, have found some correlation between acetylcholine and anaphylactic shock (8). A perfusion from guinea pig heart during anaphylactic shock is said to contain acetylcholine (9).

Without being able at the present time to give experimental proof, we feel justified in supposing that an inflammatory process of the brain could act in much the same way as some of the metabolic changes already discussed, by liberating acetylcholine from the complex proteins and from the lipids of the brain, thus initating the cycle of characteristic lesions. It is an attractive hypothesis which would explain a rather vague biological phenomenon of inflammation on a chemical basis, but, so far, the experimental data available are too insufficient to prove it. Although at the present time only some speculative thoughts can be offered, the field is wide open for future investigations.

Bibliography

1. Cavazzani: *Arch ital. d. biol.* 18:62, 1892.
2. Tinel: *Semaine méd. des Hôp.* 36:382, 1929.
3. Roger et Binet: *Traité de Physiologie*. 9, 430, Paris: Masson, 1933.
4. Renshaw, Green, and Ziff: *Jour. Pharmacol. and Exper. Therap.* 62:430, 1938.
5. McIntosh: *Jour. Physiol.* 93:46, 1938.
6. Rickl: *Jour. Physiol.* (U.S.S.R.) 18:19, 1935.
7. McMeekin: *Jour. Biol. Chem.* 109:64, 1935.
8. Chigira: *Japan. Jour. Exper. Med.* 19:23, 1941. Nakamura: *Japan. Jour. Exper. Med.* 19:31, 1941.
9. Went and Rissak: *Arch. f. exper. Path. u. Pharmakol.* 37:82, 1935.

For further information on choline, consult the extensive reviews in *Annual Review of Biochemistry*, by Gaddum (4:311, 1935), Gerard (6:419, 1937), and Best and Rideout (8:349, 1939).

Tuberculosis will become a plague affecting approximately ten million persons in Europe after the war. Tuberculosis is the delayed "action bomb" of the diseases of war.—Robert E. Plunkett, in *Bull. Nat. Tuberc. Assn.*, Jan. 1943.

Book Reviews

Diagnosis by Laboratory Methods

Clinical Diagnosis by Laboratory Methods. A Working Manual of Clinical Pathology. By JAMES CAMPBELL TODD, Ph.B., M.D., late professor of clinical pathology, University of Colorado, School of Medicine, and ARTHUR HAWLEY SANFORD, A.M., M.D., professor of clinical pathology, University of Minnesota (The Mayo Foundation). Tenth edition, thoroughly revised, with 380 illustrations, 32 in colors. Philadelphia and London: W. B. Saunders Company, 1943. Pp. 911. Price $6.00.

Thirty-five years ago the first edition of this standard work was published. Pathology is now a recognized specialty of medicine, and is no longer merely a laboratory adjunct as it was then, but an important factor in bedside diagnosis and treatment. There are many "newer methods" herein described: The fluorescent dye method of staining tubercle bacilli, Brewer's cultivation of anaerobic organisms, and the Mazzini test which is described as "excellent" in serodiagnosis of syphilis. Clinical chemistry has given much; for example, in the study of porphyinuria, a titration method for determining the alkalinity of the blood, photelmetric methods, the phosphatase method of King and Armstrong, and other procedures for the study of sodium and potassium, and the determination of trypsin and amylase. It is necessary to know how to find out the amount of sulfonamides and sulfones in the blood, and to identify sulfonamide crystals in the urine. This text tells how. Then there are various "discussions"; e.g., on the importance of hemoconcentration, on the significance of inclusion bodies and on diseases due to fungi, with illustrations . . . But in the light of all this new material, the authors have not forgotten the "old and tried methods". These they say must not be discarded or neglected unless something better has taken their places. In other words, something new is not always good; and something old is not always something bad. This differentiation is not always to be found in all medical texts these days, and it shows the broad outlook which this fine book offers to the student and to the advanced clinician.

Field Surgery

Field Surgery in Total War. By DOUGLAS W. JOLLY, M.D., Ch.B.N.Z., late major, Spanish Republican Army Medical Service. With a foreword by SURGEON REAR-ADMIRAL G. GORDON-TAYLOR, O.B.E., M.D., F.R.C.S., F.R.A.C.S. With thirty-two illustrations. New York: Paul B. Hoeber, Inc., medical book department of Harper and Brothers, 1941. Pp. 242. Price $3.50.

This is a record of the treatment of some five thousand wounded soldiers in the Spanish Civil War, and of these nearly one thousand were abdominal gunshot injuries. Mr. Jolly is enthusiastic about the mobile surgical unit which is finding a place in our own war set-up, and also he favors the "three-point forward system" which consists of, 1, a casualty classification post near the front; 2, a No. 1 hospital for the very urgent cases; and 3, a No. 2 hospital for the less urgent cases. Every medical officer command knows how difficult it is in the heat of battle to pick out those most likely to survive . . . A diagram shows the relative advantage of operating under a "time-lag" of five hours, ten hours, and eighteen hours . . . The author notes that the use of a Red Cross emblem had to be discontinued in the Spanish fracas, for it brought down air-attacks from the flyers of Mussolini and Hitler, who used Spain as their practice ground for the present global war.

Section I of the book is devoted to "Organization and Tactical Disposition of Surgical Units in the Field", that is, to well-laid plans for evacuating the wounded or operating at the "hot spot." Section II describes "Surgical Technique in Forward Areas." Chapter X has much to say concerning the Winnett Orr and Böhler "Primary Closed Treatment of Fractures." Contrary to popular opinion there is no greater danger of gas gangrene or other severe infections if the closed method is used at once in reducing fractures. No doubt much of this success is now due to the field of use of the sulfa drugs as germ-destroying agents. Traumatic surgery owes a very great debt to the sulfa family. It does not appear that Surgeon Jolly had the advantage of this life-saving medicament, and yet his surgical results seem to have been excellent.

Gynecology

A Textbook of Gynecology. By ARTHUR HALE CURTIS, M.D., professor and chairman of the department of obstetrics and gynecology, Northwestern University Medical School, Chicago. Fourth edition, reset. With 401 illustration chiefly by TOM JONES. Philadelphia and London: W. B. Saunders Company, 1942. Pp. 723. Price $8.00.

This is a fourth edition and is strictly up to date. The author has included the most modern therapy in gynecology as it relates to the endocrines and also the sulfa drugs in infectious conditions. This has been a standard textbook for many years and has many followers. The material is presented, as usual, in clear, straight-forward style, and in it one may find all of the basic principles pertaining to gynecology. There are several excellent illustrations in color in addition to the beautiful black and whites which one expects to find in Curtis.

Internal Medicine

Methods of Treatment. By LOGAN CLENDENING, M.D., and EDWARD H. HASHINGER, A.B., M.D., clinical professors of medicine, Medical Department of the University of Kansas. Eighth edition. St. Louis: The C. V. Mosby Company, 1943. Pp. 1033. Price $10.00.

This delightful presentation of methods of treatment in internal medicine is a succinct correlation of tested procedures widely scattered in medical literature. It is invaluable in everyday practice because methods recommended for treatment are followed by actual techniques and the rationales behind them. The first part describes each procedure under drugs, diet, hydrotherapy, etc.; the second part considers the applications and the results to be expected under the headings of various diseases. The book thus makes a compact armamentarium of therapeutic methods based upon actual effectiveness in practice. There is even a chapter on psychotherapy. Obsolete methods have been eliminated and controversial procedures avoided so that the book teems with crystalized facts available for immediate application. The language is simple, the print clear, the illustration practical and the references up-to-date. Physicians will benefit greatly from this handy treatment volume.

Critique

This Old World The outstanding contributions to science announced at the New York meeting of the American Association for the Advancement of Science, December 1928, included: Prof. Alfred C. Lane of Tufts announced that the estimate of the earth's age had been off five hundred million years, for it was really a billion years old, so the figure must be doubled. This trifling error had crept in from computations based on the amount of salt carried to the ocean by streams; physicists assured us the new figure was more nearly correct. Dr. John H. Gerould of Dartmouth had discovered how a butterfly's heart beats. If you must know, it beats in both directions. Since it is thus a double-action affair it beats man's heart considerably. It has been seen to beat in both directions. The professor looked at that, but did not discuss what made the heart beat or who cared. Dr. Frank E. Lutz talked of insects which probably exist in outer space, and Dr. Harlow Shapley of Harvard offered new evidence of the size of the universe, and remarked that there were about ten billion stars. He had examined 2,750 faint nebulæ in the Coma-Virgo region. If a watch one and one-half inches in diameter was take to represent our own star cluster, the Coma-Virgo cluster would be a cloud two inches in diameter six feet away. At that point the problem became one of measuring intergalactic spaces sixty inches from the watch, or a scant hundred million light years away.

Infection The results of infection depend upon the species, the virulence of the germs, the vitality of the host, and the state of his immunity—and a lot of other things like general health, constitutional make-up, diathesis, and so on. The size, vehicle, and method of implanting the dosage of infection are important too, as is also the environmental biology of host and inoculum. Newborn infants may succumb to pneumococcus infection occasionally terminating in fatal pneumonia in four days; older children with pneumonia after measles may be infected with the same strain of pneumococcus but react altogether differently. Those who die from finger pricks are probably victims of multiple infections. Wounds acquired during postmortems and in obstetrical work are more dangerous to the doctor than mere surgical wounds.

Beneficial Effects of Milk in Children's Diet In January the *British Medical Journal* was commenting with some surprise upon the remarkable results achieved upon the growing rate of children by feeding them a milk supplement. These were the famous investigations instituted by Sir John Orr and carried on by the Scottish Board of Health. A group of children who in 1927 had received separated milk had increased in height an average of 1.5 inch and in weight an average of 2.407 pounds. They were placed on biscuits instead of milk in 1928; their height increase fell to 1.351 inch and their weight increase to 2.212. Another group, which had had supplementary biscuits in 1927, and had shown a height increase of 1.101 inch and a weight increase of 2.234 pounds, was put on separated milk in 1928, with the result that their height increase averaged 1.454 inches and their weight increase 2.237 pounds.

Futhermore the milk-fed children improved in appearance, their hair became glossy, their nails smooth, their spirits high, and the girls often felt able to lick their brothers in unfair fights. Teachers and janitors found them more difficult to manage, however, than the biscuit-fed and the control children, just as the Nazis found it easier to manage underfed people in captive nations. The world's aggressive races are said to have been heavy milk consumers as a usual thing. Where the booze drinkers come in the Critic wouldn't know.

From Folklore to Science in Drugs In 1928 Sir Arthur Keith told the Chartered Society of Massage and Medical Gymnastics that the therapeutic use of cod-liver oil was for years purely empiric; Newfoundland Islanders are said to have cured night-blindness for years with raw or cooked bird livers. Captain Cook recognized and prevented scurvy first. Quinine, digitalis, opium, arsenic, and many other drugs all travelled the route from folklore to science. (Cf. *J.A.M.A.* January 19, 1929, p. 243).

Industrial Waste How many remember these statements in a report on industrial waste issued in September 1921 by the American Academy of Political and Social Science of Philadelphia (*Annals*, p. 37)? "The evaluation for remedying the condition as derived by the committee places more than thirty percent upon management and less than twenty-five percent upon labor. That is to say, if industrial waste is to be eliminated, management can through its opportunity remove more than fifty percent of it, whereas labor can through its opportunity remove less than twenty-five percent."

Prosperity In these days of warlike hard times let us remember the good old days when the country was really prosperous, as shown in an article by Abraham Epstein in the *New Republic* for February 6, 1929. In October 1928 President John E. Edgerton of the National Association of Manufacturers said: "The most ominous problems I see are those which appear to have resulted from the general loss of balance between production and distribution. Of practically all commodities which America can produce, it is producing regularly from fifteen to thirty percent more than it has the capacity and power to consume and dispose of profitably in available markets. * * * It is safe to say that a general average of forty percent of all factories that are operating at all today are doing so at a loss." Remember this was prosperity and a conservative critic speaking. The American Banker's Association at this time reported that savings deposit figures showed an increase from $8,404,373,000 in 1922 to $26,090,902,000 in 1927, while the number of depositors had increased from 12,605,260 to 48,354,784. But wage earners' bank accounts had grown least, and workmen averaged $30 a week in wages, certainly insufficient to produce very high purchasing power at prevailing prices. THE CRITIC

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OCTOBER 1943

Medicolegal Notes

Relation Between Preexisting Lung Condition, Accidental Leg Injury and Subsequent Erysipelas

Where the medical testimony conflicted as to cause of disability in a workmen's compensation proceeding, it was held within the exclusive province of the referee and compensation board to pass upon its weight and credibility and decide between two medical opinions. The court sustained their conclusion that total disability had resulted from an accidental leg injury contributed to by a pre-existing lung condition.

Weakening of the claimant's condition following the leg injury did not bring this case within the noncompensable class. An infection erysipelas, which developed, was found to be the direct result by the leg injury. Thomas v. Susquehanna Collieries Co., Pennsylvania Superior Court, 25 Att. 2d 98. The same court held that the burden rests upon the claimant in a proceeding for death compensation to prove by unequivocal medical testimony that the accident materially aggravated the existing disease, if such existed, to such an extent that the aggravation became the independent cause of death. By that it is not meant that the accident was the sole or exclusive cause. In other words, the claimant was required to show that the accident materially contributed to the death, rather than that the death resulted from the natural progress and development of any disease with which the deceased may have been afflicted, for which the employer is not liable.

A medical witness who attended the deceased while he was in a hospital and who was called by the defendant, testified that there was a connection between a splinter which went into deceased's little finger and became infected and the death, stating "I feel" that the splinter hastened the death, which was held to be equivalent to "I believe" and met the legal requirements. Euker v. Welsback Sheet Lighting Co. 25 Att. 2d 758.

Cross-Examination of Expert as to His Skill and Knowledge of Subject of His Opinion

A plaintiff was held totally and permanently disabled so as to be entitled to recover disability benefits under a life policy notwithstanding that a witness for the defendant was compelled to answer upon examination a hypothetical question stating facts not established by any evidence. The witness had testified that he examined the plaintff's right eye but had not examined her nose and throat and that from his examination he was of the opinion that the eye was in every respect normal. On cross-examination he was asked whether or not a certain condition of the throat, if the throat had been examined and such condition found, would have been proper to take into consideration in reaching an opinion as the condition of the eye. The witness answered that it would.

"It is perfectly proper," the court held, "on cross-examination of an expert to ask such questions as will reveal the skill and knowledge of the subject of such expert and determine whether he made such examination of the subject as would enable him to express a properly formed opinion. (Louisville, etc. K. C. v. Falvey, 1885, 104 Ind. 409, 3 N. E. 389, 4 N. E. 908;) Davis v. State, 1871, 35 Md. 496.)" This, the court said, was the evident purpose and effect of the question put here and there was nothing improper about it, Mutual Life vs. Jay, Indiana Appellate Court, 44 N. E. 2d 1020.

Reference to Malpractice Insurance May Lead to Reversal in Malpractice Action

Judgment for plaintiff in a malpractice action was reversed for improper argument of counsel to the jury that a verdict would not hurt the defendant physician. The Kentucky Court of Appeals, 289 Ky. 385, 158 S. W. 609, thought the jury in reason could have inferred from the statement either that defendant was insured or, if not, it certainly related to defendant's financial condition, which is improper argument in any case. While such reference is not always prejudicial, it is prejudicial where the question as to the proximate cause of the injury, whether or not it was one for which defendant was liable, as in this case, is so close that the slightest suggestion in the closing argument of any matter extraneous to the record might have been sufficient to tip the scale in favor of the offending party.

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*Swartz & Reilly: "Diagnosis and Treatment of Skin Diseases", p. 66

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TRUTH OF THE MATTER

We Will Have Enough to Eat

T. SWANN HARDING
Falls Church, Va.

In the *Readers' Digest* for August 1943, Louis Bromfield, wealthy writer and big-scale farmer, characteristically gave the fictional side of our food story under the misleading title, "We Aren't Going to Have Enough to Eat." He told an alarming tale, as might be expected from a writer of fiction. It seems, therefore, that the facts of the situation might also have a passing interest for a few Americans.

The August crop reports are now in. It is therefore possible to predict the food production in this crop season with some measure of accuracy, on the assumption of average weather for the remainder of the year and a continuance of present trends in livestock production. What then are the facts, both quantitatively and in terms of a nutritionally adequate diet for American civilians?

Total food production for 1943 will exceed that of 1942 by five percent, and 1942 was the sixth straight year during which our production topped that of the year before. Taking 1935-39 as a base period, food production in 1943 will exceed the yearly average of that time by thirty-two percent. Food crops will fall nine percent below the 1942 level, but that will still be thirteen percent above the average for the 1935-39 period. This crop decrease from 1942 will be more than offset by a ten percent increase in livestock production, which will run thirty-eight percent over the 1935-1939 average.

The decline in food-crop production results from a decrease in yield per acre, not from decreased acreage, for the total food-crop acreage under cultivation in 1943 will exceed that of 1942 by three percent. Yields per acre were phenomenally large in 1942. In any year the food output can easily be affected more by changes in yield per acre than by very considerable changes in acreage cultivated.

How will this food be allocated? Those agencies in the War Food Administration which act as claimants for civilians have allocated to them seventy-five percent of the total food produced in 1943. About thirteen percent will go to our military forces, ten per cent to Lend-Lease, and the remaining two percent for shipments to our territories and for other special needs. At present it appears that civilian per capita food consumption for the year as a whole will be about four percent greater than during the 1935-39 period, but six percent smaller than the record consumption in 1941.

Compared with 1942, civilians in 1943 will get a larger per capita supply of pork, eggs, chickens, fluid milk, fats and oils, fresh citrus fruits, canned juices, dried fruits, potatoes, and dry edible beans. However, their supply will be less for beef, veal, lamb, mutton, fish, most dairy products other than fluid milk, fresh and canned fruits, fresh and canned vegetables, sugar, rice, tea, and cocoa.

From a nutritional viewpoint the civilian per capita food supply will compare favorably with the average during the 1935-39 period. During 1943 the per capita

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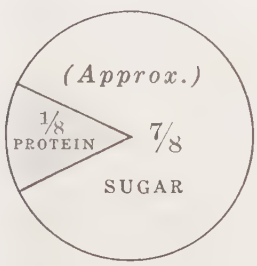

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quantities of protein, minerals, and vitamin A will probably be higher than the corresponding quantities in the earlier period. For some nutrients they will be as high as in 1941 and 1942. Civilians will have approximately the same calories in 1943 as in 1935-39 but about four percent less than in 1942.

To all intents and purposes our supply of food energy, carbohydrates, fat, ascorbic acid, and vitamin A will be as high as the average during 1935-39. Our 1943 supply of protein, phosphorus, iron, calcium, niacin, riboflavin, and thiamine will be distinctly higher. Already stories come in that beriberi and pellagra are rapidly disappearing as the eating of enriched bread becomes more and more common.

The fact that the calories available in 1943 will be less should cause no concern, for the difference is due largely to a smaller consumption of sugar. Furthermore, with greater care in food conservation, the caloric value of the food actually eaten should be as high as in previous years. Our food wastage has been enormous in the past. It was greater during 1942 than the requirements of our armed forces and our allies together. Hence starving the garbage can offers an admirable way to increase the food supply.

Our total meat production will attain an all-time high this year, eight to ten percent larger than in 1942, and forty-four percent larger than the average for the 1935-39 period. This is mainly due to a vast increase in pork. Poultry and egg production also will be of record size. Total milk production will exceed that of 1942 by little more than one percent. The output of edible fats and oils, butter excluded, for the year as a whole, is estimated to be about ten per cent above 1942, and forty-two percent above 1935-39. Butter production will be four percent higher than in 1942.

Citrus fruit production is of record size this year and will equal that of 1942, and be considerably above the average during 1935-39. Total deciduous fruit production will decline seventeen percent, however. The pack of canned fruits will be about thirty percent lower than last year, but canned juices will run fifty-four and dried fruits thirteen percent above 1942. Commercial vegetable production will fall five percent below 1942, but we shall have a record potato crop. Production of sweet potatoes, dried beans and dried peas will all be very high.

The total 1943 wheat crop is now estimated at 835 million bushels, which is 96 million bushels above the ten-year average, 1932-41. The corn crop will run fifteen percent above the same ten-year average. Because of the record number of livestock on farms, the feed supply per animal unit may be fifteen percent below that of last year, but it will equal the average for the 1935-39 period.

So much for the facts in answer to starvation talk by a writer of popular fiction.

GRANITE GABLES

A male patient was confined to the psychopathic ward of a large hospital for attempted suicide by burning his house down. In taking a case history, he was asked if he had ever tried to kill himself before. Quite readily he responded, "Oh, yes, I tried to drown myself in the bathtub once, but I had to get out because the water was too cold."

Through The Menstrual Years of Life-

THE frequency with which the menstrual life of so many women is marred by functional aberrations that pass the borderline of physiologic limits, emphasizes the importance of an effective tonic and regulator in the practicing physician's armamentarium.

In Ergoapiol (Smith), the action of *all* the alkaloids of ergot (prepared by hydro-alcoholic extraction) is synergetically enhanced by the presence of apiol, oil of savin, and aloin. Its sustained tonic action on the uterus provides welcome relief by helping to induce local hyperemia, stimulate smooth, rhythmic uterine contractions, and serve as a potent hemostatic agent to control excessive bleeding.

May we send you a copy of the comprehensive booklet "The Symptomatic Treatment of Menstrual Irregularities."

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CARBOHYDRATE	30.00 Gm.	66.00 Gm.	VITAMIN A	1500 U.S.P.U.	2953 U.S.P.U.
FAT	3.15 Gm.	31.5 Gm.	VITAMIN D	405 U.S.P.U.	432 U.S.P.U.
CALCIUM	0.25 Gm.	1.05 Gm.	VITAMIN B_1	300 U.S.P.U.	432 U.S.P.U.
PHOSPHORUS	0.25 Gm.	0.903 Gm.	RIBOFLAVIN	0.25 mg.	1.28 mg.
IRON	10.5 mg.	11.9 mg.	NIACIN	4.95 mg.	7.1 mg.

*Each serving made with 8 oz. milk; based on average reported values for milk.

Blast Perforation of Eardrums

G. W. Palmer, captain in the Indian Medical Service, presents a report (*British Medical Journal*, August 21, 1943) on sixty cases of blast perforation of the eardrums occurring simultaneously following a land-mine explosion. All the men were within fifteen yards of the mine, and some as near as five yards. Casualties were admitted to hospitals within three hours of the explosion, and the ears of all eighty-two immediate survivors were examined, when sixty were found to have traumatic perforation of one or both tympana. In all, one hundred drums were perforated, fifty percent in the antero-inferior quadrant, the remainder showing either a posterior perforation or a horseshoe perforation involving the greater part of the membrane. Tuning-fork tests revealed a middle-ear deafness in each case. Preliminary treatment in all cases consisted in the insufflation of sulfanilamide powder, followed by packing the ear with sterile gauze. Nine ears were occluded with wax and were not touched until three weeks after the injury. The proportion of drums infected was thirty-eight percent, four of which were classed as severe infections. Two of these required a cortical mastoid operation two weeks after the accident, and in both these cases the drum and the postauricular wound were dry and had healed five weeks after operation. Sulfapyridine was administered in all infected cases received and in many cases for their other injuries. All but four drums were dry within four weeks, and forty-five percent were healed within four weeks.

The author concludes that the antero-inferior quadrant is the commonest site of injury. The proportion of infection to be expected under the most ideal conditions is thirty-five to forty percent. The insufflation of sulfanilamide powder is probably of value in preventing infection. Deafness is of the middle-ear type superimposed upon a temporary nerve-deafness, and the subsequent damage to hearing is not marked.

A New Formula for Marinol

Dr. B. Thurber Guild, president of Fairchild Brothers and Foster, a subsidiary of Winthrop Chemical Company, Inc., announces that after two years of research a new formula has been developed for Marinol, the cod liver oil emulsion.

The new Marinol has been further fortified with pure vitamin D_3. The high vitamin potency of 5,000 U.S.P. units of vitamin A and 500 U.S.P. units of vitamin D, is combined with fish-liver and vegetable oils which add caloric value to the vitamin content. Laboratory technicians point out that in the improved formula the ratio of vitamin A to D, that is, ten to one, is the same as that occurring naturally in the best fish-liver preparation.

The potency is described as four times as great as in the original product, which has been marketed since 1924. The prescribed new dosage is reduced, therefore, from a tablespoonful two or three times daily to one teaspoonful daily. The taste and odors are well disguised, and the new formula is also highly homogenized, the oil droplets being so fine that they are more easily digested than before, and are therefore more easily assimilated. The product also provides "perfect miscibility with milk, special formulas, fruit, vegetable juices and water."

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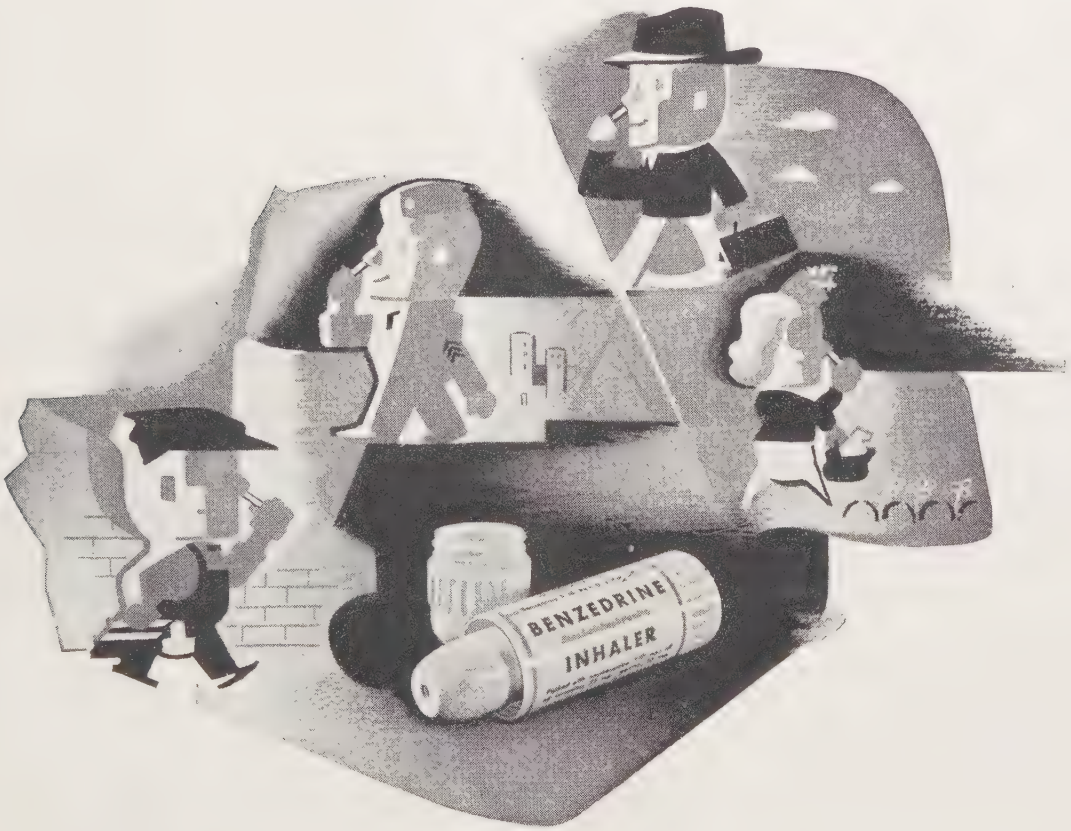

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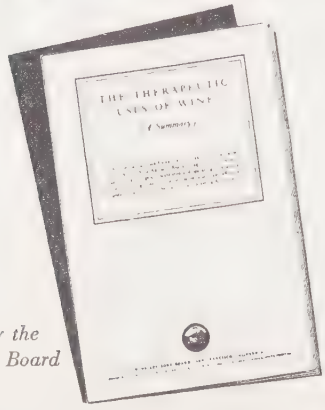
FACTS DOCTORS SHOULD HAVE ON

THE ACTIONS OF WINE



Published by the Wine Advisory Board

AN entire generation of physicians lost touch with the medical lore of wine in the United States following the first World War. Actually, however, few other substances have been as widely recommended. This monograph, which summarizes the pertinent scientific literature in the interest that fact be separated from folklore by the application of impartial analysis, will prove of interest and value to specialists in many fields, and to the general practitioner as well.

A section on wine as a food is included. The actions of wine on the gastro-intestinal system, the cardio-vascular system, the genito-urinary system, the nervous system and the muscles, and the respiratory system are discussed. The uses of wine in diabetes mellitus, in acute infectious diseases and in treatment of the aged and convalescent are dealt with. There is a section on the value of wine as a vehicle for medication. Also an important section on the contraindications to the use of wine. Those who wish to pursue the subject further will find an extensive bibliography.

This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.

Study of Germicides and Bactericides at the Ohio State University

An intensive investigation of germicides and bactericides, including antimalarials, has been undertaken by the Research Foundation of the Ohio State University, of which Dr. A. R. Olpin is director. This has been made possible through a grant of $23,000 by the William S. Merrell Company, pharmaceutical manufacturers of Cincinnati.

The grant takes the form of the establishment of three annual post-doctorate and three annual graduate fellowships in bacteriology and chemistry. Members of the regular university staff who will also contribute to these studies are Dr. J. M. Birkeland, Dr. G. L. Stahly and Professor A. R. Winter, all of the department of bacteriology, and Dr. W. R. Brode and Dr. W. G. France, of the department of chemistry.

Investigations of antimalarials to be conducted at the university will be correlated with the work going on in many other laboratories throughout the nation. An investigation of penicillin, the new and potent germicide or bactericide derived from mold, is planned. This work is part of a larger program of research coordinated by the Committee on Medical Research in Washington.

Many valuable and practical discoveries have been made through these researches, including a promising new method of synthesizing menthol. This is especially important at the present time as the supply of menthol from the Far East has been virtually cut off by the war.—*Science*, August 6, 1943.

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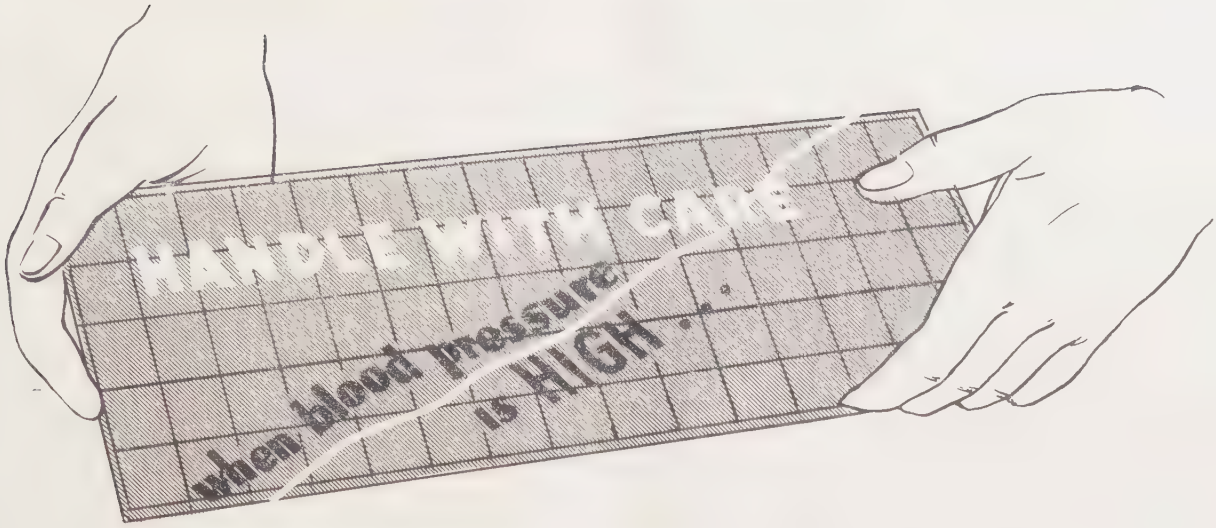

Patients with high blood pressure must be handled with care if the dangerous sequelae of hypertension are to be avoided. The administration of a safe, effective hypotensive is definitely indicated to bring blood pressure down to safer levels.

HEPVISC is such a hypotensive. Clinical studies have shown that, unlike drugs of the nitrite group which lower blood pressure with jarring suddenness, HEPVISC produces a smooth and gentle, yet prompt and effective descent in sphygmomanometer readings. Moreover, HEPVISC produces a sustained effect, one that persists throughout the period of its use.

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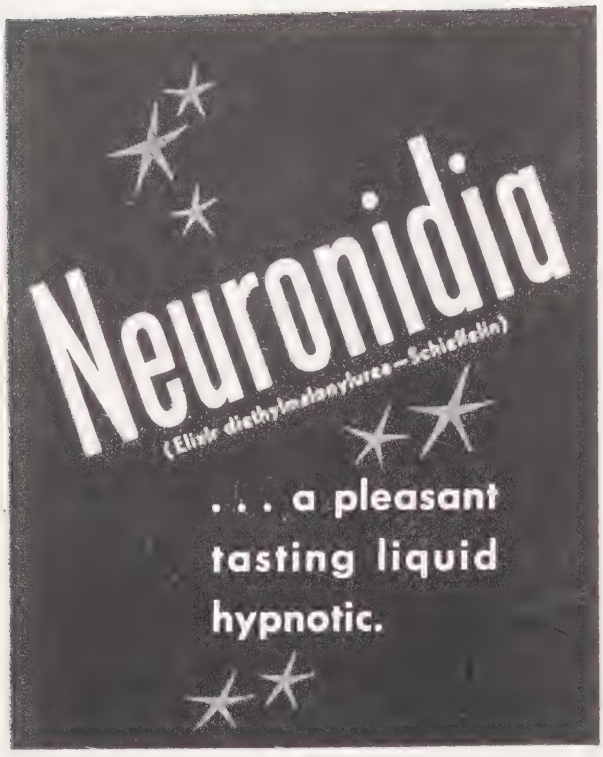

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On awakening the following morning the patient is fully refreshed, both in mind and body.

Hypnotic dose: One dessertspoonful upon retiring.

Sedative dose: One teaspoonful two or three times daily.

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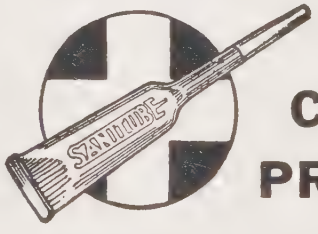
Questionnaire on the Use of Baby Oil

To secure authoritative answers to such questions as "Should baby oil be antiseptic?" and, "To what age should the use of baby oil be continued?", MEDICAL RECORD sent a questionnaire to six thousand physicians in forty-eight states. The list included more than half of the pediatricians and obstetricians in the United States; general practitioners made up the balance. The response was unexpectedly large, replies being received from thirty percent of the specialists, and from more than fifteen percent of the general practitioners.

The question which drew the largest number of replies from specialists was, "Should baby oil be antiseptic?" Eighty-two percent voted yes. The question showing the greatest variation in opinion was, "To what age should baby oil be continued?" The average response was 6.1 months, but almost as many physicians voted for twelve months, and a surprisingly large number voted for eighteen months.

Another question that produced interesting answers was, "How often should baby be brought to physicians for regular examination?" While it might have been expected that the present overburden of work might cause physicians to urge that babies be brought to them less frequently, approximately sixty percent voted for monthly examinations.

Dr. Charles C. Chapple, of Philadelphia, has been appointed chief medical gas officer in the Office of Civilian Defense, succeeding Dr. David D. Rutstein, who resigned sometime ago to become Health Commissioner of New York City. Dr. Chapple has been commissioned a surgeon in the U. S. Public Health Service.



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A single tube only—half the ointment inside the urethra to prevent gonorrhea, half applied outside to protect against syphilis.

No "two tubes" to get confused, no color to stain fingers and clothing, no odor, no irritation.

As to comparative efficiency, let us send you laboratory findings.

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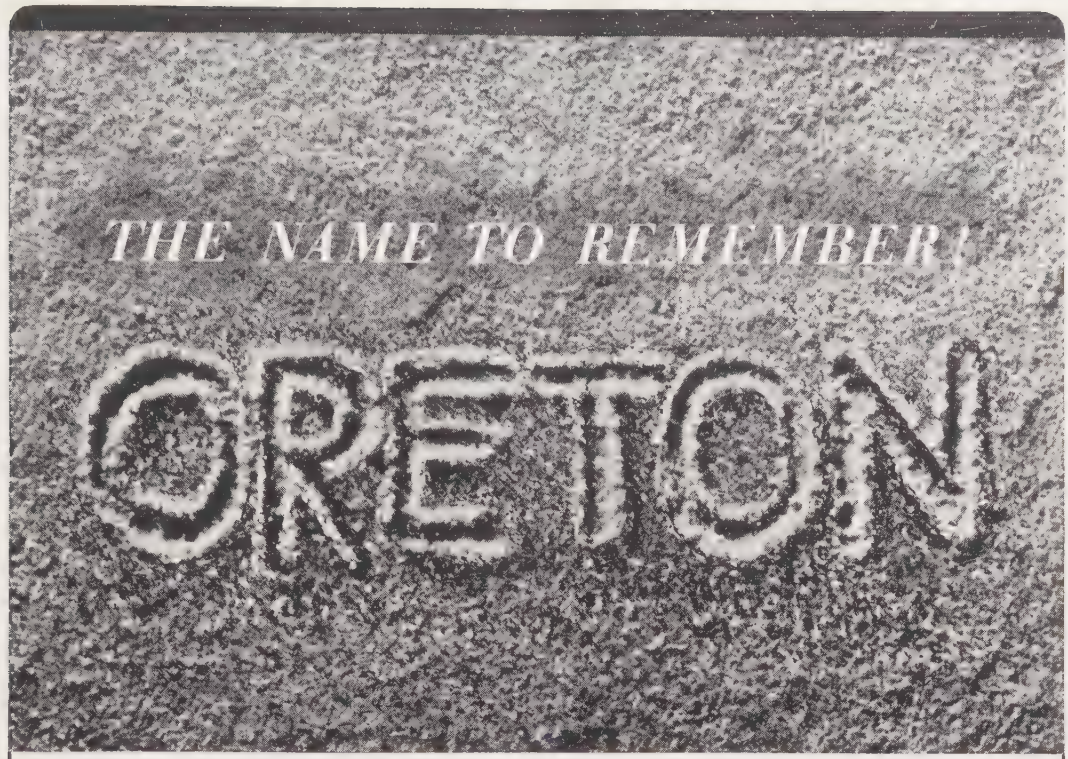

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Grants Made by American Foundation for Tropical Medicine

At a meeting of the executive committee of the American Foundation for Tropical Medicine, Inc., held in New York on July 23d, it was announced that during the six month period ending July 30, 1943, twelve grants amounting to $43,680 had been made by the foundation to eleven North American medical schools, a scientific journal, and the Army Medical Museum. These grants, made possible by contributions and pledges for the current year of $66,600 by twenty-one American corporations, are being used to strengthen teaching and research programs in tropical medicine and parasitology at the various schools.

The medical schools which received grants during the period from April 1st to June 30th were: Cornell University Medical College, Duke University School of Medicine, University of Pennsylvania School of Medicine and Stanford University Medical School. The Army Medical Museum and the *Journal of Parasitology* were also aided. During the first quarter of 1943 grants were received by the New York University College of Medicine, Tufts College Medical School, Tulane University School of Medicine, University of Manitoba Faculty of Medicine, University of Nebraska College of Medicine and Yale University School of Medicine.

The funds granted during the second quarter of 1943 are being utilized as follows:

Army Medical Museum.—To finance the collection of tropical pathological material and its distribution to station hospitals.

Cornell University Medical College.—Salary aid for full-time instructor in parasitic diseases and to purchase materials for teaching and research.

Duke University School of Medicine.—For full-time technician, materials and supplies to establish an identification and distribution center for pathogenic fungi and to maintain a registry of autopsy and biopsy material from cases of fungous disease.

University of Pennsylvania School of Medicine.—Salary aid to finance expansion of teaching in parasitology and tropical diseases.

Stanford University Medical School.—Salary for full-time technician and funds to purchase supplies and equipment for the department of tropical medicine.

Journal of Parasitology.—To supplement the publication funds to permit enlarged type pages.

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A trial supply will be gladly sent to physicians. Please write to the Dept. of Professional Service.

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Animal and Insect Pests

A great deal is known concerning animal and insect pests which menace the food supply and steps are taken to counter attack in every way possible, with satisfactory results on the whole, it may be said. Insect "fifth columnists" commit unremitting sabotage in many states, as the gypsy moth, the European corn borer and in particular the Japanese beetle, whose ravages constitute a calamity of the first order.

These are alien insects and of fifty of the worst insect pests in the country, about one third have been imported while the other two thirds are more or less indigenous. Some of these are a menace to the health of man while others attack his domestic animals. Mosquitoes head the list in some respects. Of all the animal and bird pests which affect mankind directly and indirectly the rat takes first place. The rat is universal, is a carrier of a flea which spreads disease far and wide, and is a destroyer of food everywhere.

In Britain it is stated confidently that animal pests devour or spoil every year a tenth of the aggregate farm crops and are responsible for nearly a fifth of the fruit and vegetable losses. These are the regular losses, not those due to special outbreaks and epidemics which may lead to even greater damage. Parasites of farm stocks cause much loss, sheep ticks for instance. Losses from land pests occur at all stages. The seeds and young seedlings are subjected to continuous attack. The growing plant is susceptible at all points, its leaves to caterpillars and beetles, its stem to boring insects of great variety. Its sap is sucked by bugs and the roots devoured by wireworms and eel worms. The mature crop is attacked by fruit maggots and caterpillars. Stored crops are liable to be damaged or ruined by grain weevils, flour moths and other pests, among which the rat is the most omniverous and generally destructive. The normal losses of agriculture are increased enormously by war conditions. Increased acreage allows the farmer less time to deal with the pests on any one field or crop and has has less skilled labor with which to do so.

Caterpillars, which live on cabbages, provide a homely example of the damage done to one species of food although they do immense damage in several directions. As far as cabbages are concerned, they wreak almost incalculable damage every year, not only to the crops of commercial growers, but also to the important sources of food raised in allotments and private gardens.

The matter, in Britain, has not been tackled scientifically or systematically as it has been grappled with here and to a less extent in Australia. Slipshod methods have prevailed for the most part, but the war and the inability to get the quantity of food imported as in peace time has stirred up the scientists to try to offset as much as possible the waste of food stuff by the inroads of animal and insect pests. There is every reason to believe that a concerted attempt by experts to solve to some extent the problem of animal and insect pests, might be successful.

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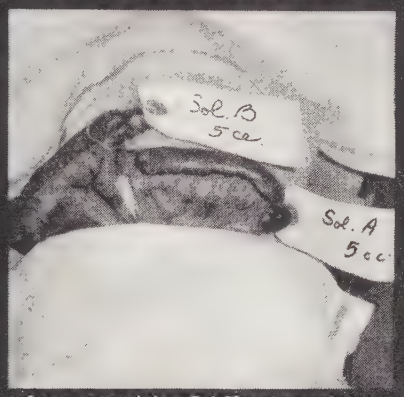

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Gold Tribromide (Elixir Bromaurate) in the Treatment of Pertussis. Report of 450 Cases. Medical Record, August, 1939.

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Disorders of the Nervous System

BEAUTIFUL—QUIET—HOMELIKE—WRITE FOR BOOKLET

FREDERICK W. SEWARD, M.D., Director FREDERICK T. SEWARD, M.D., Resident Physician CLARENCE A. POTTER, M.D., Resident Physician

New War Ailments

The war is producing many new terms to be added to the glossary of war ailments when the next medical dictionary is compiled, according to the New York Committee of the National War Fund. Among these new terms descriptive of physical and mental illness born of all-out war are "famine psychosis", "bomb shock", "barbed wire disease", and "convoy fatigue".

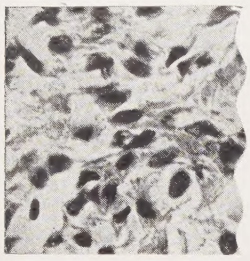
"Famine psychosis", according to the Greek War Relief Association, is described as a mental condition resulting from malnutrition among destitute civilians in Nazi-occupied countries.

"Bomb shock" is a nervous affliction which thousands of children in the British Isles have suffered as a result of repeated bombings. According to British War Relief, the youngsters are in a state of mortal dread and have lost both their mental and physical balance. Treatment and training are given to help restore their equilibrium.

"Barbed wire disease" is the term applied to prisoners of war who fall victim to the intense monotony and boredom of incarceration in prison camps, according to War Prisoners Aid, which has undertaken the prevention of such cases by providing equipment and courses to occupy the time and divert the minds of the hapless men behind barbed wire barricades.

"Convoy fatigue", as reported by United Seamen's Service, is used by doctors in the merchant marine to describe the condition of seamen whose ships have been torpedoed, bombed or sunk and who are unable to sleep or rest because of the constant threat of similar experience in their hazardous job of getting supplies of war across the seas to our fighting men and our allies.

Cases of "convoy fatigue" are so prevalent and so serious that a woman doctor has been assigned to direct a medical education program under the joint auspices of the War Shipping Administration and United Seamen's Service designed to provide merchant seamen with what are called "psychological life preservers" as a means of preventing war shock that might incapacitate a sailor following torpedoings, bombings or continuous tension of wartime sea duty.



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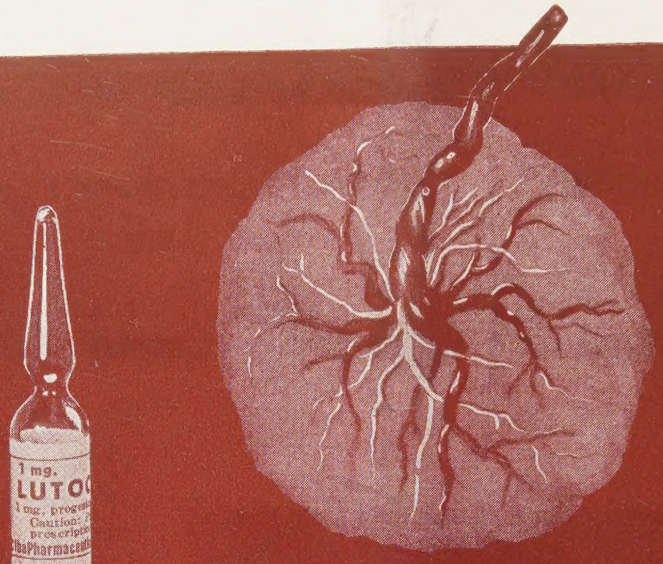

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